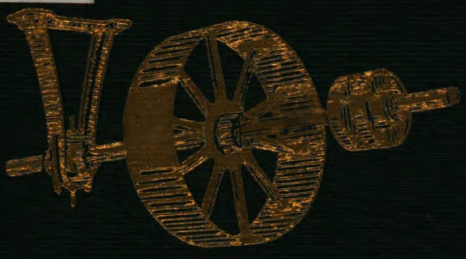
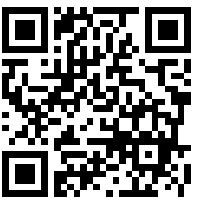


Meese & Gottfried Company

9th Ed. Section No. 1

PULLEYS SHAFTING COUPLINGS ETC.



NOTICE

This catalog is

NOT COMPLETE

It is section

No. 1 ONLY

of our general catalog.

For other sections see list on second flyleaf within.

Meese & Gottfried Company

SAN FRANCISCO

SEATTLE PORTLAND

LOS ANGELES

A WORD OF EXPLANATION

On account of the great variety of goods embraced in our line we have decided to separate the goods into various classes and issue our general catalog in sections as listed below.

Each section contains an index and is complete in itself.

LIST OF CATALOG SECTIONS

No. 1—Pulleys, Shafting, Keys, Collars, Couplings, Belt Tighteners, Belting, etc.

No. 2—Bearings, Hangers, Floor Stands, Friction and Jaw Clutches, Gears and Friction Wheels.

No. 3—Chain Belt, Sprockets, Roller Chain, Silent Chain Drives and Rope Transmission.

No. 4—Elevating, Conveying and Screening Machinery.

No. 5—Miscellaneous Machinery, Saw Mill, Mining and Special.

No. 6—Butters Centrifugal Pumps.

No. 7—

No. 8—

No. 9—

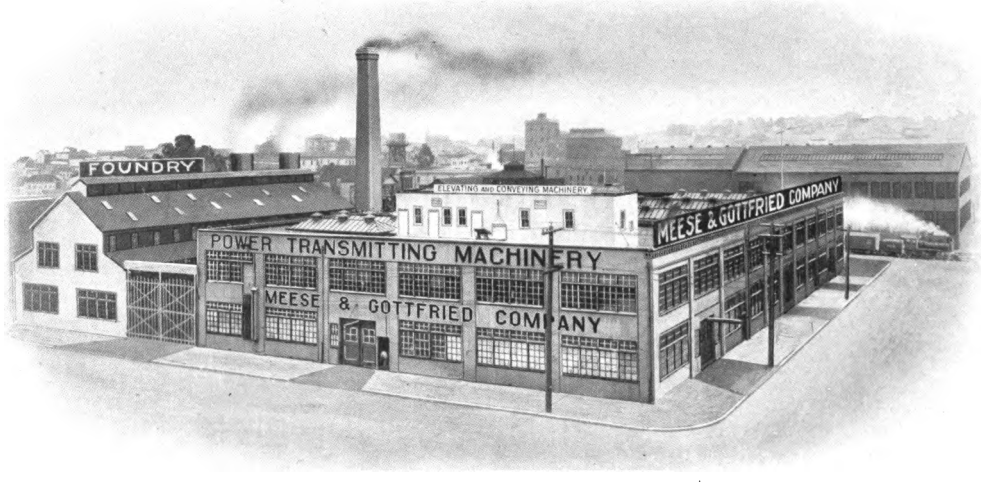
*Any of the above sections will be mailed free to interested parties.

This classification and sectionalizing of our catalog will simplify the problem of keeping the book up to date, as sections becoming obsolete by reason of changes in design or listing of goods will be replaced by later ones from time to time without affecting the other sections.

*NOTE—It is our intention to publish all the above listed sections without unnecessary delay and mail to customers as soon as issued, but on account of the great amount of work involved, they may not be issued in numerical rotation, and it will be some time before the final section is off the press.

Meese & Gottfried Company

ENGINEERS AND MANUFACTURERS



GENERAL VIEW OF THE WORKS

Meese & Gottfried Company

Branch:
SEATTLE
558 First Ave., South

Branch:
PORTLAND
67 Front St.

Main Office, 660 Mission Sts.
SAN FRANCISCO
Works, 19th and Harrison Sts.

Branch:
LOS ANGELES
Cor. San Pedro and E. Third Sts.

GENERAL CATALOG

SECTION NO. 1
(9th Edition)

Pulleys—Shafting—Keys—Collars—Couplings
Belt Tighteners—Belting, Etc.

Meese & Gottfried Company

Established 1880

ENGINEERS AND MANUFACTURERS
(Largest concern of its kind on the Pacific Coast)

CONVEYING, ELEVATING, SCREENING AND MECHANICAL POWER TRANSMITTING MACHINERY

Manila and Wire Rope Transmission

DETACHABLE CHAIN AND LINK BELT
For Conveyors, Elevators and Power

SILENT CHAIN DRIVES STEEL ROLLER CHAIN

M & G STEEL RIM PULLEYS

WOOD AND STEEL PULLEYS, CAST IRON PULLEYS

FRICTION CLUTCHES

PAPER AND IRON FRICTIONS, SHAFTING, HANGERS, BOXES, GEARING, SPROCKETS, ETC.

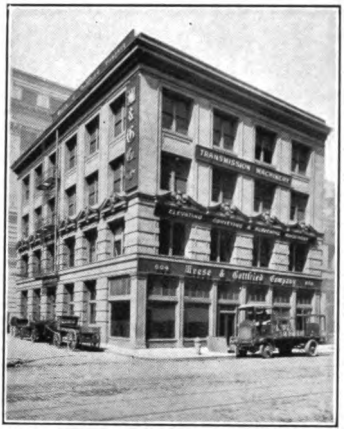
General Offices and Salesrooms:
660 Mission Street
Works:
19th and Harrison Streets
SAN FRANCISCO, CAL.

Cor. San Pedro and East Third Sts.
LOS ANGELES
CAL.

67 Front Street
PORTLAND
ORE.

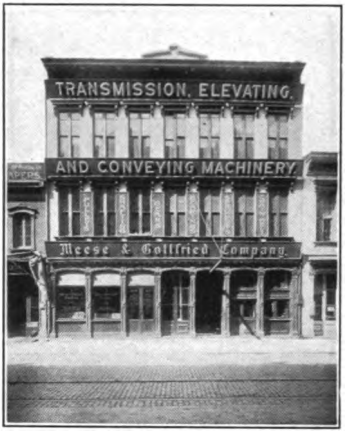
Our Mark

558 First Avenue South, SEATTLE, WASH.



660 Mission Street
SAN FRANCISCO, CAL.

Our Mark



67 Front Street
PORTLAND, ORE.

558 First Ave. S.
SEATTLE, WASH.

Cor. San Pedro and East Third Sts.
LOS ANGELES, CAL.

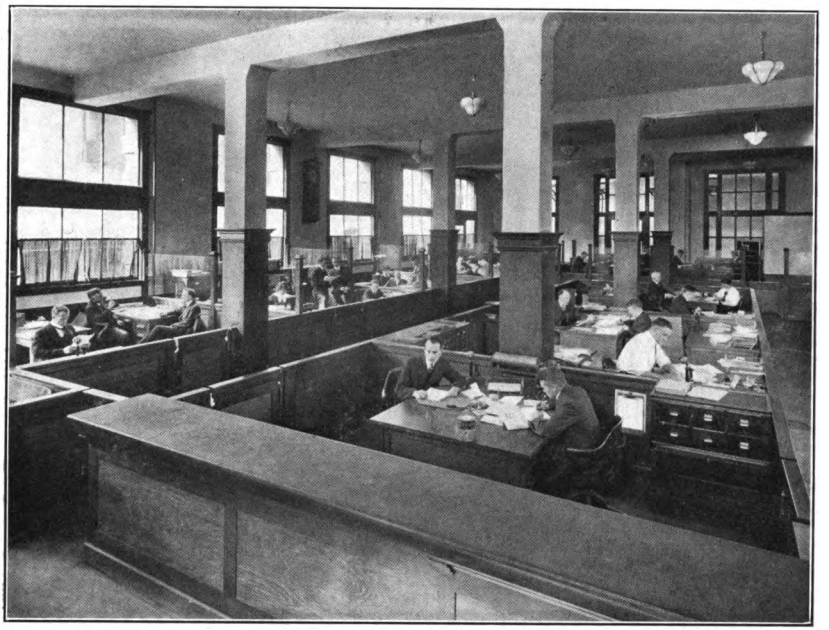
Meese & Gottfried Company

ENGINEERS AND MANUFACTURERS

HOUSES IN THE FOUR PRINCIPAL CITIES ON THE PACIFIC COAST

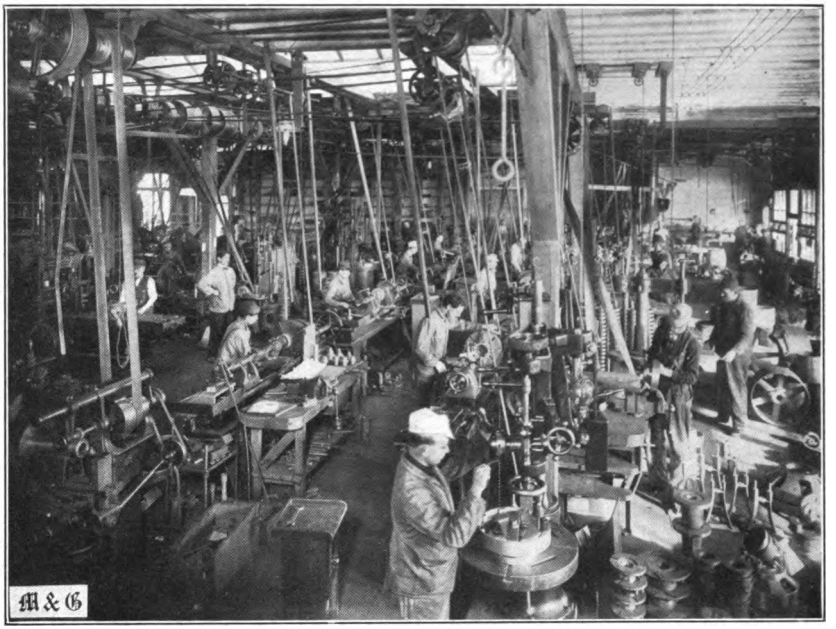
Complete line of standard goods carried in stock at each place

Experienced resident engineers to handle any problem in
TRANSMISSION, ELEVATING, CONVEYING or SCREENING MACHINERY

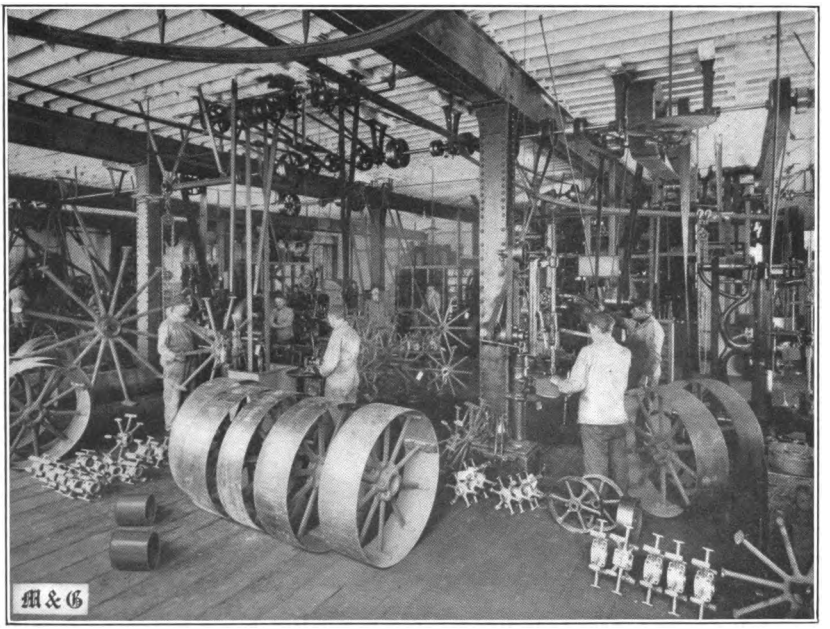


EXECUTIVE OFFICES

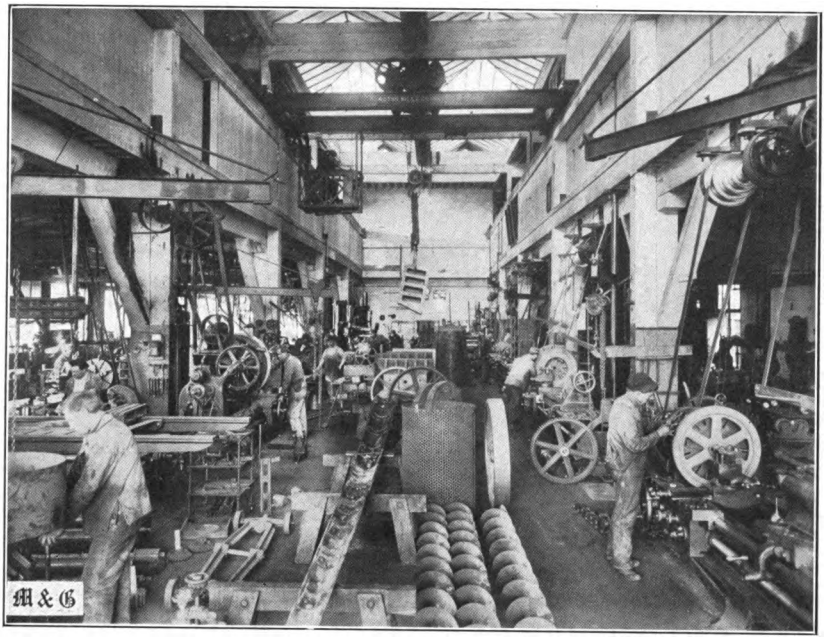
DRAFTING ROOM



TRANSMISSION SHOP



M & G STEEL RIM PULLEY SHOP



MACHINE SHOP

PATTERN SHOP

TERMS AND GUARANTEE

PRICES—The prices given in this section of our catalog will supersede all those of an earlier edition of this section, and, unless otherwise agreed, are F. O. B. our works.
Lists are subject to discount and as some goods are affected by the rise and fall of the markets, customers are requested to send for

CURRENT DISCOUNT SHEET

QUOTATIONS—All quotations made are contingent upon immediate acceptance only.

SPECIAL MACHINES AND SIZES—Orders for special machinery, or *special sizes* of standard goods cannot be countermanded.

STANDARD GOODS RETURNED OR EXCHANGED—Unless due to our error, standard goods returned or exchanged will be subject to a charge of 5% of invoice to cover cost of handling and will also be charged with any freight or cartage expenses paid by us.

TELEGRAPH AND TELEPHONE ORDERS—Orders sent by telegraph or telephone will only be accepted subject to sender assuming responsibility of our correct interpretation of message.

DELIVERIES—All deliveries are subject to the modifying influences of strikes, accidents, delays of carriers and other conditions beyond our control.

BOXING—We make an extra charge for boxing, at cost, and all goods are shipped at the buyers' risk, our responsibility ceasing when goods are delivered to transportation company in good condition.

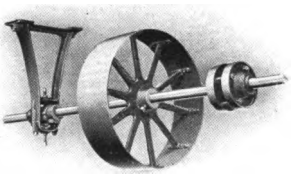
DESIGN—Description and illustrations contained herein were correct at time of going to press, but we reserve the right to alter designs or otherwise improve our line as the development of the mechanical arts makes it possible or advisable.

GUARANTEE—We guarantee all goods of our manufacture to be made of suitable material in a proper and workman-like manner and we agree to replace or repair any of said goods proved within six months from date of shipment to have been defective at such time of shipment, but we shall not be liable for any damages or delays caused by such defective goods, nor will any allowance be granted for any repairs or alterations made without our written consent.

GENERAL CATALOG

SECTION NO. 1
(9th Edition)

PULLEYS
SHAFTING
KEYS
COLLARS
COUPLINGS
BELT TIGHTENERS
BELTING
ETC.



OUR MARK

A FEW WORDS ON PULLEYS

The following four pages should be carefully studied before ordering pulleys, and care should be used to select the proper style and size of pulley to best meet the requirements of the case. When in doubt specify the conditions to be met and we will furnish the pulleys most suitable.

We offer four styles of Pulleys.

M & G Steel Rim Pulleys (Whole or Split)
CAST IRON PULLEYS (Whole or Split)
AMERICAN Pressed Steel Split and
GILBERT Wood Split, Pulleys.

FACES—The faces of all pulleys are made wide enough to carry belts of nominal width of face given in price lists. Crowning faces are always furnished unless Straight faces are ordered.

HUBS—Standard Cast Iron and M & G Steel Rim Pulley hubs (without bushings) will be faced or furnished to exact lengths at a slight additional charge. See table of standard hub lengths on pages 33 and 51.

LARGE BORES—Pulleys with extra large bores are subject to an extra charge. See table of Bore Limits on page 57.

HIGH SPEED PULLEYS—The maximum peripheral speed for cast iron pulleys is about 5000 feet per minute.

When pulleys are wanted for rim speeds over 3000 feet per minute it should be mentioned when ordering as special balancing is necessary and for which an extra charge is made.

LAGGING—We can furnish pulleys covered with leather, rubber or canvas to meet any requirement. See partial list on page 55.

SPECIAL PULLEYS—Special pulleys of any kind, or with special hubs, or in any way departing from our standards will be quoted on upon receipt of sketch showing just what is wanted. See definition of "Special Pulleys" on pages 14 and 15.

A FEW WORDS ON PULLEYS (*Continued*)

KINDLY CONSIDER

That, to fill orders *correctly*, it is absolutely necessary to mention Diameter, Face and Bore, also whether pulleys require a *straight* or *crowning* face. Unless specifically *otherwise* ordered, pulleys are furnished with a *crowning* face.

NOTE—When belt has to be *shifted* on a pulley to drive *tight* and *loose* pulleys, the face of the *driving* pulley for same must be *straight*. *Tight* and *loose* pulleys always have *crowning* faces.

All pulleys used for Belt Tighteners should be ordered *straight* face.

Be careful to send the *exact diameter* of the *shaft*—for example, $1\frac{5}{16}$ inches exact, or 2 inches exact (both of these sizes are usually termed 2 inch shafting, and it is therefore very important to state the *exact* size required). This rule holds good for all sizes, and strict attention to it will result in the avoidance of *expensive errors*.

In ordering always *give diameter first*, then *face*, (crown or straight) then *bore*, thus—one M & G Steel Rim Pulley 36 by 10 crown, $2\frac{5}{16}$ bore.

Also specify whether pulley is to be *whole* or *split*, or *whole rim* and *split hub* (Clamp Hub Pulleys), also whether it is to be *keyseated* or to be held with *set screws*, and if to be *keyseated*, give exact width of keyseat *if special*. Width of standard keyseat is approximately $\frac{1}{4}$ of diameter of shaft. *See table of standard keyseats on page* 85.

Pulleys ordered keyseated are always supplied with straight keyway (sometimes called a *feather way*) with set screws over it unless *taper keyseat or taper keyway* is specifically ordered.

For rule to figure speeds and sizes of pulleys see page 149.

For table of horsepower of pulleys see page 148.

For table of horsepower of belting see pages 132 and 133.

DEFINING SPECIAL PULLEYS

Many of our customers order pulleys having diameters or faces running into fractions of inches (for example: 17¼ diameter by 12⅜ face).

The practice heretofore followed of charging for such fractional size pulleys by taking the next larger size or face listed in catalog has been found inadequate to meet the excessive cost of such SPECIAL PULLEYS.

Our moulding machines, pulley rings, arms, etc., are all made according to certain standards covered by sizes in our pulley lists and even a slight departure from sizes given necessitates special work, pattern work, lagging up pulley rings to increase diameters, excessive thickness of rim, extra machine work, etc., and always entails a far greater cost of production than can possibly be covered by charging at the price of the next larger size listed.

However, when any departure from standard pulleys is insisted on, pulleys will be considered "SPECIAL" and subject to an extra charge ranging from 10% up, depending on the amount of extra work and material involved.

To keep down manufacturing costs and therefore avoid extra charges we would request that customers confine themselves whenever possible to LISTED SIZES, both in diameter and face, as faces are always wide enough to accommodate belts of face width listed and there are but few mechanical conditions where, for instance, a 14-inch diameter pulley will not work precisely as well as a 13½-inch, 13¾-inch or 14⅛-inch diameter pulley, especially when it is recalled that the best belt drives usually involve some 2% slip, and that loose or poor belts slip a great deal more.

Continued on next page

DEFINING SPECIAL PULLEYS (*Continued*)

PULLEY PRICE LISTS as given in this catalog will cover *standard pulleys only*, and under the heading of *Special Pulleys* will be included the following and appended will be found the extra charges made.

1st—Pulleys ordered of fractional inch or exact diameters. *Subject to 35% extra charge.*

2d—Pulleys ordered of fractional inch or exact faces. 20% *extra.*

3d—High Speed (over 3000 feet per minute rim speed), Motor and Generator, Pulleys. *See discount sheet.*

4th—Pulleys with offset arms or hubs. 20% *extra unless very special.*

5th—Pulleys with special or long hubs. *See extra list on page* 56.

6th—Pulleys with extra large bores. *See list for large bores on page* 57.

7th—Pulleys with extra high crowns. 10% *extra.*

8th—Pulleys bored to special gauges or fine fractional sizes. *Metric or involving less than sixteenths of an inch*—10% *extra.*

9th—Matched pulleys for tight and loose, with hubs faced to suit. *See list on page* 56.

10th—Pulleys with hubs faced one or both ends. *See list on page* 56.

11th—Flanged Pulleys. *See list on page* 52.

12th—Pulleys with plate centers. 35% *extra.*

13th—Step and Cone Pulleys. *These are always special and must be figured—price on application—send sketch.*

14th—Pulleys with faces wider than sizes listed in standard list. *See list on page* 53.

15th—Internally Beaded, or Ribbed Pulleys. 20% *extra.*

16th—Pulleys specified to be of any particular weight, either heavier or lighter than standard pattern. *For pulleys heavier than standard* 6c *per lb. net for all extra weight.*
Lighter pulleys than standard will be quoted on application.

NOTE—**M & G** Steel Rim Pulleys (except those listed on page 20) are always furnished Set Screwed. Keyseating is charged extra. C. I. pulleys are furnished *either* Set Screwed or Keyseated for Straight Keys with Set Screws over *or* supplied with Taper Keyseats without set screws, when so ordered, but an extra charge is made when both Taper Keyseats and Set Screws are desired. See table on page 56.

M & G STEEL RIM SPLIT PULLEYS
With Interchangeable Bushings

M & G
THE FINAL PULLEY

The new **M & G** Steel Rim Split Pulley shown above is a Split Pulley of the interchangeably bushed type with all the weaknesses of this type of pulley *left out.*

It is not solely made of wood, or iron, or of steel, but is a logical combination of the latter two materials.

Iron in the hub and arms to make it *rigid* where it should be so and Wrought Steel in the rim where lightness and toughness are the qualities required.

The rim is *substantial*—not thin sheet metal requiring a beaded edge, but *heavy wrought steel* that you can *see* and *feel*—and besides it is sustained at many points by the numerous arms of the rigid cast spider within.

The parting points are secured with a special taper lock joint (patented)—the strongest and safest joint ever devised for a parting pulley of this kind.

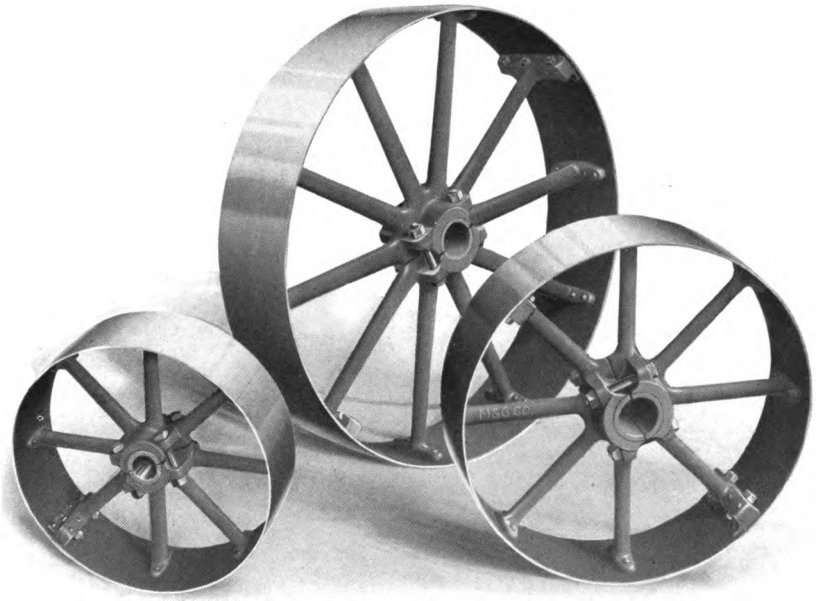
Interchangeable bushings are supplied to fit pulley to shaft when shaft is smaller than the normal bore of the pulley.

M & G steel rim split pulleys grip the shaft like a vise and require no keys though keys may be used in unusually severe drives if desired.

See constructional features and price lists on the following pages.

QUITE DIFFERENT FROM PULLEYS YOU HAVE BEEN USING!

M & G STEEL RIM SPLIT PULLEYS
With Interchangeable Bushings
(*Continued*)



In the manufacture of the **M & G** Steel Rim Split Pulleys the central "spiders" are cast complete, and being without rims, are entirely free from shrinkage strains. The hubs are then bored and the ends of the arms *ground off from a common center* on especially devised machines.

The Steel Rims are then rolled and firmly riveted in place, after which the pulleys are mounted on mandrils and the surface and edges of rims ground *dead true.*

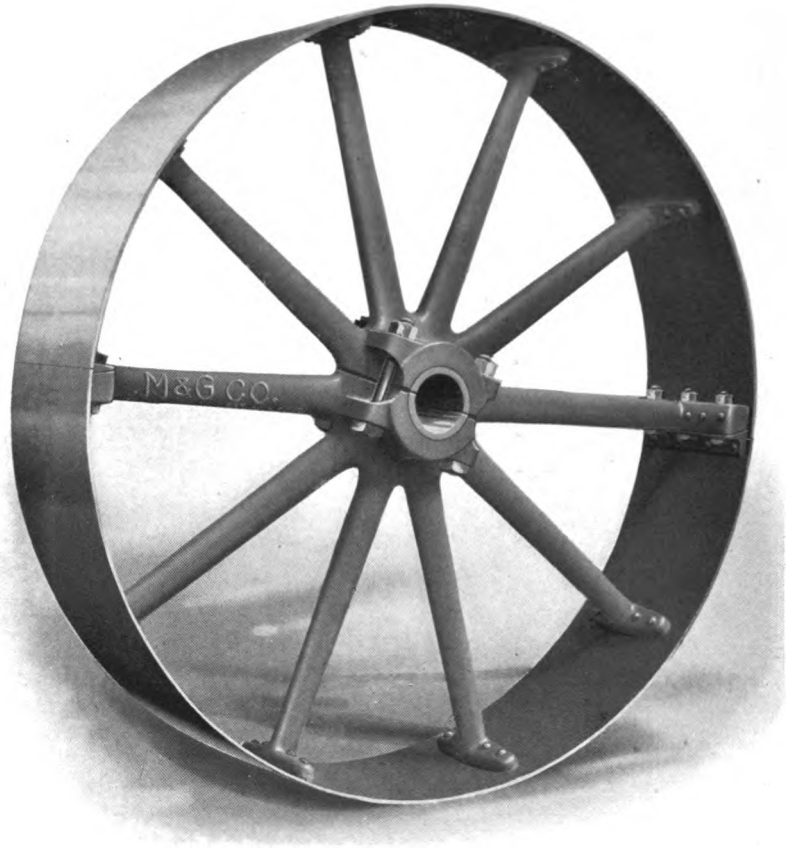
Hubs are then split, pulleys balanced and painted and they are ready for your line shaft.

The new **M & G** Steel Rim Split Pulley is the culmination of twenty-five years of experience in pulley building by the largest manufacturers of pulleys in the West and the result is a pulley that is as nearly perfect as a pulley can be—free from the *excessive weight* of cast iron, yet very *substantial* and *much safer* in its construction—powerful in operation—handsome in appearance—adaptable to different shafts—as *round* as a dollar—*quick* in delivery and *low* in price.

QUITE DIFFERENT FROM PULLEYS YOU HAVE BEEN USING!

(*For Price List see page* 20)

M & G STEEL RIM SPLIT PULLEYS
With Interchangeable Bushings
(*Continued*)



The new M & G Steel Rim Split Pulleys are *models* of strength and beauty.

Not too heavy, *nor too light*, but all the weight necessary to stand up to the work.

Rigid cast centers, tough steel rims.

Oval crown, or straight faces.

Taper lock joint on the rim sections. (Patented).

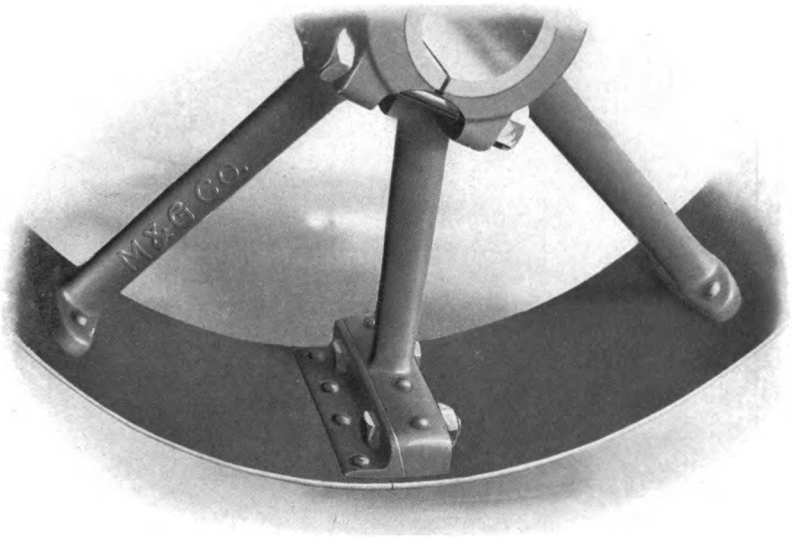
Interchangeable bushings to fit any shaft.

All made for double belt service.

QUITE DIFFERENT FROM PULLEYS YOU HAVE BEEN USING!

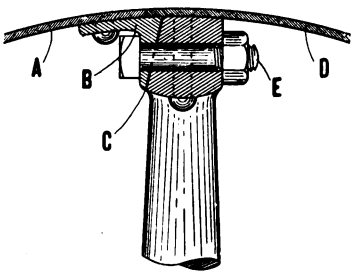
(*For Price List see page* 20)

M & G STEEL RIM SPLIT PULLEYS
With Interchangeable Bushings
(Continued)



IT'S IN THE JOINT, where most split pulleys are weak. It's the joint wherein the danger lies, for whether it be a Wood Pulley, Cast Iron Pulley, or Steel Pulley *of any make*, the joint is usually the weakest part—the part that means *destruction* and sometimes *death* when things go wrong.

STUDY THE JOINT on the new M & G Steel Rim Split Pulley (*Patented*)—it cinches up with a wedge-like action and is one of the strongest reasons, in these days of "Safety First," why the M & G Steel Rim Split Pulley is the only proper pulley for your industrial plant.



A—One side of heavy steel rim firmly riveted to the special steel angle B.

D—Other half of rim, riveted to the arm. When drawn together by means of large bolts E, the rim sections are forced into perfect alignment by reason of the taper joint C, which being supported by a rigid arm is proof against the outward pull of centrifugal force or the inward pressure of the belt.

A slight modification from the above is made on small, narrow face, one bolt pulleys.

QUITE DIFFERENT FROM PULLEYS YOU HAVE BEEN USING!

(For Price List see page 20)

M & G STEEL RIM SPLIT PULLEYS

With Interchangeable Bushings

(Continued)

(See description on preceding pages.)

PRICE LIST (Subject to Discount)

Dia. In.	Face in Inches										
	2	3	4	5	6	8 *	10	12	14	16	18
9	$ 3.38	$ 3.60	$ 3.90	$ 4.20	$ 4.50	$ 5.10	$ 5.75	.....	.....	.....	.....
10	3.45	3.75	4.05	4.35	4.65	5.25	5.90	$ 6.45	.....	.....	.....
11	3.65	3.90	4.20	4.50	4.80	5.40	6.00	6.90	.....	.....	.....
12	3.90	4.20	4.63	4.80	5.33	5.78	6.45	7.65	$ 9.00	$10.25	.....
13	4.05	4.35	4.80	5.20	5.62	6.43	7.20	8.40	9.50	10.75	.....
14	4.20	4.50	5.20	5.65	6.15	7.05	8.03	9.00	10.00	11.25	.....
15	4.35	4.65	5.45	5.80	6.55	7.65	8.80	9.75	10.75	12.00	.....
16	4.50	4.95	5.75	6.10	6.90	8.25	9.45	10.50	11.50	12.65	.....
17	.....	5.25	6.00	6.50	7.28	8.78	10.05	11.25	12.40	13.65	.....
18	.....	5.55	6.38	7.00	7.65	9.30	10.65	12.00	13.25	14.50	.....
19	.....	5.80	6.75	7.50	8.25	10.13	11.25	12.90	14.20	15.60	.....
20	.....	6.00	7.50	8.10	9.00	10.73	12.00	14.25	15.30	16.90	$18.59
21	.....	6.25	8.00	8.90	9.60	11.25	12.98	15.60	18.00	20.55	22.60
22	.....	6.50	8.55	9.50	10.28	12.00	14.10	16.80	19.50	21.30	23.43
23	.....	7.00	8.70	9.90	10.58	12.60	14.75	18.00	21.00	24.30	26.73
24	.....	7.50	8.90	10.00	10.95	13.20	15.68	19.05	22.65	26.25	29.92
25	.....	.....	9.20	.....	11.45	13.80	16.40	20.20	24.50	29.25	35.05
26	.....	.....	9.55	.....	11.95	14.40	17.10	21.30	26.25	31.20	36.15
28	.....	.....	10.80	.....	12.90	15.45	18.15	22.90	28.50	34.50	40.35
30	.....	.....	12.00	.....	14.10	17.25	19.90	24.75	31.50	38.10	45.00
32	.....	.....	13.20	.....	15.45	19.35	22.50	26.86	34.15	41.65	48.37
34	.....	.....	14.40	.....	17.25	21.75	25.50	30.00	36.75	45.00	51.75
36	.....	.....	15.90	.....	19.50	24.00	28.65	33.75	39.75	48.60	55.50
38	.....	.....	19.50	.....	21.75	26.40	31.05	37.15	42.75	51.75	58.87
40	.....	.....	21.00	.....	24.00	28.50	33.75	40.15	46.50	55.15	62.25
42	.....	.....	23.25	.....	26.25	32.25	37.50	43.50	50.25	57.75	65.62
44	.....	.....	.....	.....	29.25	35.62	41.25	47.25	54.00	61.12	69.00
46	.....	.....	.....	.....	33.00	39.00	45.00	50.25	57.75	64.50	72.00
48	.....	.....	.....	.....	36.75	42 00	48.75	54.00	61.50	67.50	75.00
50	.....	.....	.....	.....	40.87	47.25	53.25	58.50	66.00	75.00	84.00
52	.....	.....	.....	.....	46.50	51.00	57.00	63.00	69.00	78.75	90.00
54	.....	.....	.....	.....	50.25	56.25	61.50	67.50	74.25	83.25	96.75
56	.....	.....	.....	.....	54.00	60.75	66.75	72.75	80.25	90.00	104.25
58	.....	.....	.....	.....	60.00	65.25	71.25	78.37	86.62	96.37	110.62
60	.....	.....	.....	.....	63.75	70.50	77.25	84.00	93.00	102.75	117.00
62	.....	.....	.....	.....	64.40	72.85	84.30	95.95	107.55	119.95	132.30
64	.....	.....	.....	.....	65.05	76.50	88.20	100.10	111.95	124.60	137.20
66	.....	.....	.....	.....	68.55	80.25	92.20	104.35	116.45	129.35	142.20
68	.....	.....	.....	.....	72.20	84.15	96.35	108.75	121.10	134.25	147.40
70	.....	.....	.....	.....	75.80	88.10	100.70	113.55	126.35	139.95	153.60
72	.....	.....	.....	.....	79.50	92.15	105.05	118.15	131.30	145.40	159.65

*Pulleys with faces wider than their diameters cannot be made with crowning face.

For wider faces see next page. Larger diameters page 22.

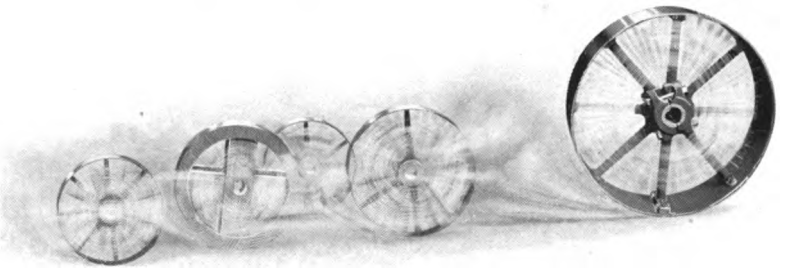
In ordering give exact bore and state whether crown or straight face pulleys are wanted.

For table of hubs and bores see page 23.

Note—We have patterns for many odd diameters and faces which are not stocked or listed above but can be made up to order at a somewhat increased price.

☞ SIZES LISTED ON THIS PAGE ARE CARRIED IN STOCK READY FOR IMMEDIATE DELIVERY

M & G STEEL RIM SPLIT PULLEYS (*Continued*)



WINNERS!

M & G Steel Rim Split Pulleys easily pass all others in the race for pulley supremacy.

WHY?

Because they started in the race with a full knowledge of the many weaknesses of their competitors.

READ FULL DESCRIPTION ON PRECEDING PAGES.

PRICE LIST (Continued)

*Wider faces—not bushed (subject to discount).

Dia. In.	Face in Inches										
	20	22	24	26	28	30	32	34	36	38	40
24	$ 34.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
25	39.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
26	41.40	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
28	46.35	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
30	49.50	$ 55.50	$ 61.50	$ 67.50	$ 74.25	$ 81.67	.....	.....	.....	.....	.....
32	54.37	60.37	66.37	72.37	79.60	87.56	$ 96.31	.....	.....	.....	.....
34	57.45	63.75	69.75	75.00	82.50	90.75	99.82	.....	.....	.....	.....
36	61.50	67.50	73.50	79.50	87.45	96.19	105.80	$116.38	$128.01	.....	.....
38	64.87	70.87	76.87	82.87	91.15	100.26	110.28	121.30	133.43	$153.15	.....
40	69.75	77.25	84.75	92.55	101.80	111.98	123.17	135.48	149.02	160.25	.....
42	73.12	80.62	88.12	95.62	105.18	115.69	127.25	139.97	153.96	169.65	$178.00
44	78.00	87.00	96.00	105.00	115.50	127.05	139.75	153.72	169.09	180.45	189.10
46	81.00	90.00	99.00	108.00	118.80	130.68	143.74	158.11	173.92	190.95	199.85
48	87.00	99.00	111.00	123.00	135.30	148.83	163.71	180.08	198.08	202.85	212.60
50	96.00	108.00	120.00	132.00	145.20	159.72	175.69	193.25	212.57	214.75	225.05
52	102.00	114.00	126.00	138.00	151.80	166.98	183.67	202.03	222.23	227.65	238.50
54	108.75	120.75	132.75	144.75	159.22	175.14	192.65	211.91	233.10	240.60	251.95
56	119.25	134.25	149.25	164.25	180.67	198.73	218.60	240.46	264.50	254.00	266.00
58	125.62	140.62	155.62	170.62	187.68	206.44	227.08	249.78	274.75	267.65	280.30
60	132.00	147.00	162.00	177.00	194.70	214.17	235.58	259.13	285.04	282.10	295.45
62	144.85	185.80	201.65	214.70	227.80	241.10	254.50	268.05	288.70	295.40	309.45
64	150.00	197.10	210.20	223.50	236.85	250.40	264.05	273.85	291.75	305.70	320.10
66	155.30	205.55	218.95	232.50	246.15	259.95	273.85	287.95	302.20	316.50	331.15
68	160.80	214.30	227.95	241.70	255.70	269.85	284.10	298.50	313.05	327.65	342.55
70	167.60	223.70	237.85	252.20	266.60	281.20	295.95	310.90	326.00	341.20	356.80
72	174.30	232.90	247.35	262.00	276.80	291.90	307.20	322.75	338.50	354.45	370.85

The wide face pulleys listed above have two or more rows of arms.

For larger diameters see next page.

*Sizes listed on this page are not carried in stock but are made up upon receipt of order in shortest possible time and are bored to fit shaft, therefore not supplied with bushings as are the stocked sizes listed on preceding page.

For table of bores and extra charges for excessively large bores for pulleys listed on this page, use table on page 57.

M&G STEEL RIM SPLIT PULLEYS (*Continued*)

These large diameter and wide face pulleys are not supplied with bushings —see note below.

PRICE LIST (Subject to Discount)

Diameter Inches	Face in Inches								
	8	10	12	14	16	18 *	20	22	24
74	$96.35	$109.65	$123.20	$136.85	$151.50	$166.30	$181.50	$197.25	$257.70
76	100.65	114.30	128.35	142.55	157.75	173.10	188.95	205.25	268.35
78	105.05	119.15	133.70	148.45	164.20	180.20	196.60	213.45	279.40
80	109.60	124.25	139.35	154.65	170.95	187.45	204.40	221.80	291.05
82	114.25	129.45	145.10	160.95	177.90	195.05	212.65	230.80	302.90
84	119.00	134.75	150.95	167.40	184.95	202.75	221.05	239.90	315.00
86	123.90	140.25	157.10	174.20	192.40	210.85	229.80	249.25	327.70
88	128.90	145.85	163.35	181.05	199.90	218.95	238.55	258.65	340.60
90	.....	151.70	169.85	188.20	207.65	227.30	247.45	268.30	354.05
92	.....	157.75	176.55	195.70	215.85	236.10	256.85	278.15	368.00
94	.....	163.85	183.45	203.20	223.95	244.95	266.35	288.20	382.15
96	.....	170.15	190.55	210.95	232.35	253.90	275.85	298.25	396.90
98	.....	176.60	197.85	219.10	241.20	263.25	285.65	308.50	410.75
100	.....	181.50	203.20	224.90	247.45	269.90	292.65	315.80	424.60
102	.....	186.40	208.45	230.50	253.40	276.35	299.50	322.90	438.40
104	.....	191.35	213.85	236.30	259.55	282.75	306.20	329.95	452.25
106	.....	196.95	220.00	243.05	266.95	290.90	315.10	339.50	466.10
108	.....	203.40	226.90	250.45	274.90	299.40	324.70	349.40	479.95

*WIDER FACES (*Continued*)

Diameter Inches	Face in Inches							
	26	28	30	32	34	36	38	40
74	$272.90	$288.30	$303.95	$319.80	$335.90	$352.30	$368.90	$385.90
76	284.10	300.10	316.35	332.85	349.65	366.70	383.95	401.55
78	295.75	312.35	329.25	346.40	363.80	381.45	399.30	417.60
80	307.00	325.20	342.65	360.35	378.35	396.60	415.05	433.95
82	320.50	338.30	356.50	374.90	393.60	412.55	431.70	451.30
84	333.15	351.70	370.55	389.65	409.05	428.70	448.60	468.95
86	346.55	365.80	385.35	405.15	425.25	445.60	466.20	487.30
88	360.20	380.00	400.15	420.60	441.40	462.50	483.85	505.70
90	374.35	394.90	415.75	436.85	458.25	479.95	501.90	525.00
92	389.45	410.50	432.10	453.95	476.10	498.50	521.25	544.25
94	404.00	426.05	448.40	471.00	493.85	517.00	540.35	564.10
96	419.45	442.20	465.15	488.35	511.90	535.70	559.70	584.05
98	435.45	459.15	483.00	506.85	530.95	555.25	579.70	604.60
100	446.90	470.95	495.15	519.45	544.00	568.75	593.65	619.00
102	457.75	482.30	507.00	531.80	556.80	582.00	607.35	633.10
104	469.10	494.05	519.15	544.35	569.75	595.25	620.80	646.75
106	482.20	507.85	533.70	559.60	585.80	612.10	638.50	665.30
108	496.95	523.10	549.55	576.05	602.85	629.75	656.85	685.35

*Pulleys with faces 20 inches and wider have two or more rows of arms.

In ordering give exact bore and state whether crown or straight face pulleys are wanted.

Note—The large pulleys listed on this page are made up on order only and bored to fit shaft, therefore are not supplied with bushings as are the stocked sizes listed on page 20.

For table of bores and extra charges for excessively large bores for pulleys listed on this page use table on page 57.

M & G STEEL RIM SPLIT PULLEYS (*Continued*)

Table of maximum bores and lengths of hubs of interchangeably bushed pulleys listed on page 20.

ALL DIMENSIONS GIVEN IN INCHES

Pulley Diameters	Faces	Bores and Hubs furnished		Pulley Diameters (*Continued*)	Faces	Bores and Hubs furnished	
		Bores	Hub Length			Bores	Hub Length
9	2 to 5	1 11/16	3½	19 and 20	3 to 5	2 11/16	3½
"	6 to 8	"	4½	" " "	6 to 8	"	4½
10 and 11	2 to 5	"	3½	" " "	10 to 12	"	5½
" " "	6 to 8	"	4½	" " "	14 to 18	3 7/16	8½
" " "	10	"	5½	21 to 24	3 to 5	2 11/16	3½
12 and 13	2 to 5	2 7/16	3½	" " "	6 to 8	"	4½
" " "	6 to 8	"	4½	" " "	10 to 12	3 7/16	5½
" " "	10 to 12	"	5½	" " "	14 to 18	"	8½
14 and 15	2 to 5	"	3½	25 to 36	4	2 11/16	3½
" " "	6 to 8	"	4½	" " "	6 to 12	3 7/16	5½
" " "	10 to 12	"	5½	" " "	14 to 18	4 7/16	8½
" "	14	"	6½	38 to 42	4	2 11/16	3½
16	2	"	3½	" " "	6 to 8	3 7/16	5½
"	3 to 5	2 11/16	"	" " "	10 to 12	4 7/16	6½
"	6 to 8	"	4½	" " "	14 to 18	"	8½
"	10 to 12	"	5½	44 to 48	6 to 8	3 7/16	5½
"	14 to 16	3 7/16	8½	" " "	10 to 12	4 7/16	6½
17 and 18	3 to 5	2 11/16	3½	" " "	14 to 18	"	8½
" " "	6 to 8	"	4½	50 to 72	6 to 12	"	6½
" " "	10 to 12	"	5½	" " "	14 to 18	"	8½
" " "	14 to 16	3 7/16	8½				

An extra charge will be made as per list on page 56 if hubs are wanted faced.

Any smaller bore than shown in table may be secured by the aid of the interchangeable bushings. Larger bores may be had upon special order.

NOTE—For all M & G Steel Rim Split Pulleys wider than 18 inches face, also all above 72 inches in diameter, the standard maximum bores will be as given in table on page 57 and hub lengths as per table on page 33.

M & G STEEL RIM WHOLE PULLEYS

This style of pulley consists of a central spider of cast iron, to which a steel rim is firmly riveted, a construction which produces a pulley greatly superior to a cast iron pulley, for the following reasons:

1. These pulleys are absolutely free from *shrinkage* strain, as the hubs and arms are first cast without rims. The "spiders" are centered and the hubs bored, the arms are then *ground* concentrically with the axis, after which the steel rims are attached and *ground* from the same centers.

2. They combine the minimum weight with the maximum strength, being from 40 to 60 per cent lighter than cast iron pulleys for similar duty—also considerably cheaper.

3. The rims being of *wrought steel*, of even thickness, insure a pulley, which in regard to *balance* is much superior to an ordinary cast iron pulley.

4. Weight being less than cast iron pulleys, admits the use of lighter shafting and hangers, thus reducing the weight on buildings and saves power ordinarily wasted turning useless weight.

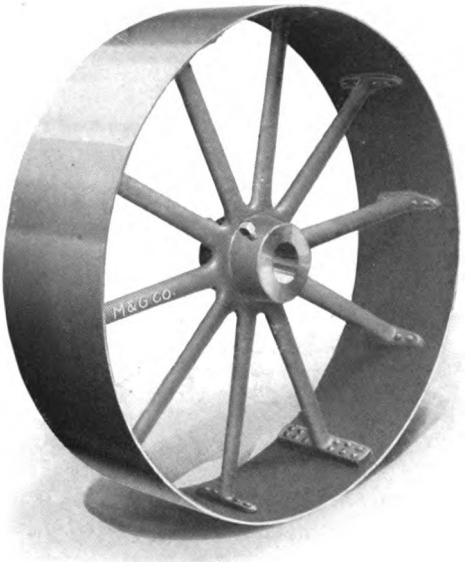
STANDARD M & G STEEL RIM WHOLE PULLEYS ARE DESIGNED FOR SINGLE OR NORMAL DOUBLE BELT USAGE

Extra strong pulleys for severe duty, either with extra heavy arms or with cast steel arms, internally flanged rims, etc., will be made to order.

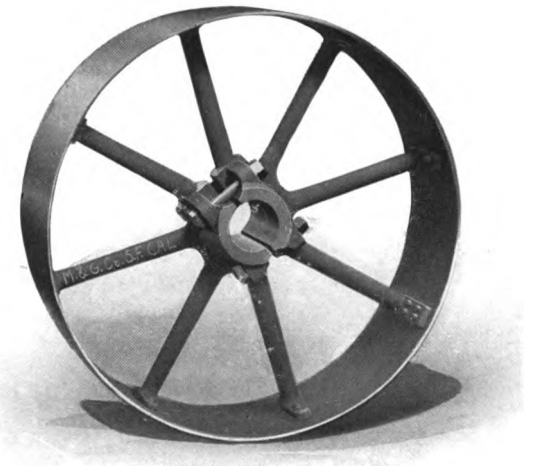
M & G STEEL RIM PULLEYS ARE ALSO MADE SPLIT WITH INTERCHANGEABLE BUSHINGS

See description and list on pages 16 to 22

M & G STEEL RIM WHOLE PULLEYS (*Continued*)



M & G STEEL RIM WHOLE PULLEY
(Set screwed as regularly furnished)

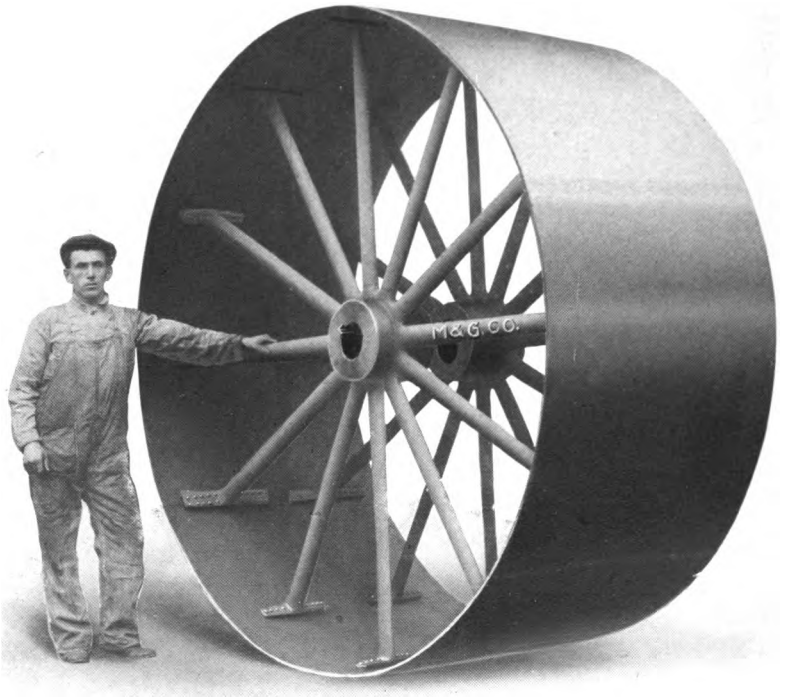


M & G STEEL RIM "CLAMP HUB" WHOLE PULLEY

(Clamp Hub Pulleys are sold from standard list beginning on page 29, but are subject to a lesser discount than are solid hub pulleys.)

M & G STEEL RIM WHOLE PULLEYS (*Continued*)

M & G Steel Rim Whole Pulley, 9 inches in diameter, the smallest diameter made in this style pulley.

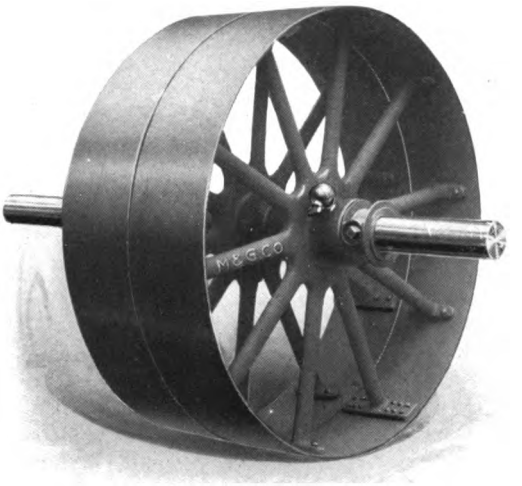


LARGE, DOUBLE ARM, **M & G** STEEL RIM WHOLE PULLEY

(All **M & G** Steel Rim Pulleys with faces wider than 19 inches have two or more rows of arms as shown.)

(*For Price List of* **M & G** *Steel Rim Whole Pulleys see page* 29)

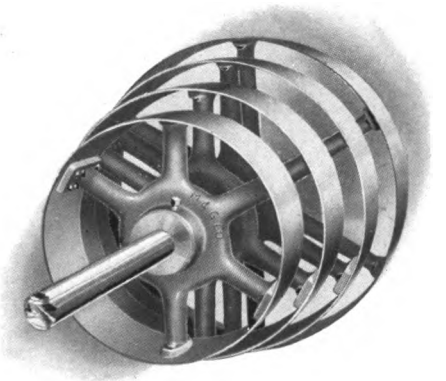
M & G STEEL RIM WHOLE PULLEYS (*Continued*)



M & G STEEL RIM TIGHT AND LOOSE WHOLE PULLEYS

With hubs a trifle longer than width of face.

(See extra list for tight and loose pulleys on page 56)



M & G STEEL RIM STEP PULLEYS—all separate whole pulleys—much lighter than cast iron step pulleys and permit of changing steps at any subsequent time if desired, or they may be disassembled and used as separate pulleys.

In figuring prices add together the prices of all sizes used for the steps.

Pulleys under 9 inches diameter will be furnished in cast iron.

If desired, step pulleys may be had with hubs full length of face to facilitate assembling—for this an extra charge is made as per list of flush hubs on page 56.

(*For Price List of M & G Steel Rim Whole Pulleys see page 29*)

M & G STEEL RIM WHOLE PULLEYS (*Continued*)

NOTE—The list prices given on pages 29 to 32 cover M & G Steel Rim *whole* Pulleys. These pulleys are not carried in stock, but being made to order only will be found *generally* somewhat higher in *net* price than the M & G Steel Rim Split Pulleys with Interchangeable Bushings (*in the sizes listed on page* 20 *only*), the reason being that the interchangeably bushed pulleys are made up in large quantities, thus reducing the cost of manufacture.

Details to be considered when ordering M & G STEEL RIM WHOLE PULLEYS

Also read all instructions on pages 12 *to* 15.

These pulleys are manufactured in two different styles:

First—*Solid* Rim and *Solid* Hub.

Second—*Solid* Rim and *Split* Hub. (Called clamp hub pulleys).

They are also furnished in pairs as *tight* and *loose*, with hubs full length of face. See additional price list on page 56.

All M & G Pulleys over 19 inches face have two or more rows of arms.

Smallest diameter 9 inches, *largest* diameter 108 inches. *Widest face* 48 inches.

Crown face M & G Pulleys cannot be made with faces much wider than their diameters. (Subject to the limitations given above.)

M & G Pulleys cannot be furnished with offset arms.

M & G Pulleys cannot be furnished with plate centers.

M & G Pulleys are all furnished setscrewed without extra charge. If keyseats are also wanted, see price list for keyseating on page 56.

Standard hubs are not faced. For facing hubs see list on page 56.

M & G Pulleys ordered with fine fractional bores, fractional or exact diameters or faces, long or offset hubs, etc., are all subject to an extra charge. See page 15.

M & G Pulleys are balanced for a rim speed of 3000 feet per minute. For higher speeds special balancing is required, and for which an extra charge is made.

M & G Pulleys with excessively large bores are subject to an extra charge. See bore table on page 33.

NOTE—The price list on next four pages covers standard pulleys only. For definition of special pulleys read pages 14 and 15.

See page 33 for Table of Standard Length of Hubs of M & G Steel Rim Whole Pulleys.

M & G STEEL RIM WHOLE PULLEYS (*Continued*)

PRICE LIST (Subject to Discount)

Before ordering see bore limits on page 33 and important information on page 28.

Face Inches	9 in. dia.	10 in. dia.	11 in. dia.	12 in. dia.	13 in. dia.	14 in. dia.	15 in. dia.	16 in. dia.	17 in. dia.
3	$ 3.20	$ 3.45	$ 3.70	$ 3.95	$ 4.20	$ 4.50	$ 4.80	$ 5.10	$ 5.40
4	3.65	3.95	4.25	4.55	4.85	5.20	5.55	5.80	6.25
5	4.15	4.45	4.80	5.15	5.50	5.95	6.35	6.60	7.10
6	4.65	5.00	5.40	5.80	6.20	6.70	7.15	7.45	8.00
7	5.20	5.55	6.00	6.45	6.90	7.50	8.00	8.50	8.90
8	5.75	6.15	6.65	7.15	7.65	8.30	8.85	9.20	9.85
9	6.30	6.80	7.30	7.85	8.40	9.10	9.75	10.10	10.80
10	6.90	7.50	8.00	8.60	9.20	9.95	10.65	11.05	11.80
11	7.50	8.20	8.75	9.35	10.00	10.80	11.60	12.00	12.80
12	8.15	8.95	9.55	10.15	10.85	11.70	12.55	13.00	13.85
13	8.85	9.70	10.40	10.95	11.70	12.60	13.50	14.00	14.90
14	.....	.....	.....	11.75	12.60	13.50	14.50	15.00	16.00
15	.....	.....	.....	12.60	13.50	14.45	15.50	16.05	17.10
16	.....	.....	.....	.....	.....	.....	.....	17.20	18.25
17	.....	.....	.....	.....	.....	.....	.....	18.20	19.40

Face Inches	18 in. dia.	19 in. dia.	20 in. dia.	21 in. dia.	22 in. dia.	23 in. dia.	24 in. dia.	25 in. dia.	26 in. dia.
3	$ 5.70	$ 6.05	$ 6.40	$ 6.75	$ 7.10	$ 7.50	$ 7.90	$ 8.35	$ 8.80
4	6.65	7.05	7.45	7.85	8.30	8.75	9.25	9.75	10.30
5	7.60	8.10	8.55	9.00	9.50	10.05	10.60	11.20	11.80
6	8.55	9.15	9.65	10.15	10.75	11.35	12.00	12.65	13.35
7	9.55	10.25	10.80	11.35	12.00	12.70	13.40	14.15	14.90
8	10.55	11.35	11.95	12.55	13.30	14.05	14.85	15.65	16.50
9	11.60	12.40	13.15	13.80	14.60	15.45	16.30	17.20	18.10
10	12.65	13.55	14.35	15.05	15.95	16.85	17.80	18.75	19.75
11	13.75	14.70	15.60	16.35	17.30	18.30	19.30	20.35	21.40
12	14.85	15.90	16.85	17.65	18.70	19.75	20.85	21.95	23.10
13	15.90	17.10	18.15	19.00	20.10	21.25	22.40	23.60	24.80
14	17.05	18.35	19.45	20.35	21.55	22.75	24.00	25.25	26.55
15	18.25	19.60	20.80	21.75	23.00	24.30	25.60	26.95	28.30
16	19.45	20.90	22.15	23.15	24.50	25.85	27.25	28.65	30.10
17	20.70	22.20	23.55	24.60	26.00	27.45	28.90	30.40	31.90
18	.....	23.55	24.95	26.05	27.55	29.05	30.60	32.15	33.75
19	.....	24.90	26.40	27.55	29.10	30.70	32.30	33.95	35.60
20	.....	.....	**31.60**	**33.10**	**35.10**	**37.10**	**39.20**	**41.25**	**43.45**
21	.....	.....	.....	.....	**36.60**	**38.65**	**40.85**	**43.00**	**45.30**
22	.....	.....	**34.35**	**35.95**	**38.05**	**40.25**	**42.45**	**44.75**	**47.10**
24	.....	.....	**37.15**	**38.85**	**41.15**	**43.45**	**45.85**	**48.30**	**50.80**
26	.....	.....	**40.00**	**41.90**	**44.25**	**46.70**	**49.30**	**51.90**	**54.55**
28	.....	.....	**42.90**	**44.90**	**47.40**	**50.00**	**52.80**	**55.55**	**58.35**
30	.....	.....	.....	.....	**50.60**	**53.35**	**56.35**	**59.25**	**62.20**

Face Inches	27 in. dia.	28 in. dia.	29 in. dia.	30 in. dia.	31 in. dia.	32 in. dia.	33 in. dia.	34 in. dia.	35 in. dia.
3	$ 9.30	$ 9.80	$10.30	$10.85	$11.40	$11.95	$12.50	$13.10	$13.70
4	10.85	11.45	12.00	12.65	13.25	13.90	14.50	15.20	15.90
5	12.45	13.10	13.75	14.45	15.15	15.85	16.55	17.30	18.10
6	14.05	14.80	15.50	16.30	17.05	17.85	18.60	19.45	20.35
7	15.70	16.50	17.30	18.15	19.00	19.85	20.70	21.60	22.60
8	17.35	18.25	19.10	20.05	20.95	21.90	22.80	23.80	24.90
9	19.05	20.00	20.95	21.95	22.95	23.95	24.95	26.05	27.20
10	20.75	21.80	22.80	23.90	24.95	26.05	27.10	28.30	29.55
11	22.50	23.60	24.70	25.85	27.00	28.15	29.30	30.60	31.90
12	24.25	25.45	26.60	27.85	29.05	30.30	31.55	32.90	34.30
13	26.05	27.80	28.55	29.85	31.15	32.50	33.80	35.25	36.70
14	27.85	29.20	30.50	31.90	33.25	34.70	36.10	37.60	39.15

Continued on next page

Black face figures in list designate double arm pulleys.

Crown face pulleys cannot be furnished with faces wider than their diameters.

Clamp hub pulleys are sold from the above list but subject to a lesser discount.

M & G STEEL RIM WHOLE PULLEYS (*Continued*)

PRICE LIST (Subject to Discount)

Before ordering see bore limits on page 33 and important information on page 28.

Face Inches	27 in. dia.	28 in. dia.	29 in. dia.	30 in. dia.	31 in. dia.	32 in. dia.	33 in. dia.	34 in. dia.	35 in. dia.
15	$29.70	$31.10	$32.50	$33.95	$35.40	$36.95	$38.40	$40.00	$41.60
16	31.55	33.05	34.50	36.00	37.55	39.20	40.75	42.40	44.10
17	33.45	34.90	36.55	38.10	39.75	41.50	43.10	44.85	46.60
18	35.35	36.90	38.60	40.25	41.95	43.80	45.50	47.30	49.15
19	37.30	38.90	40.70	42.40	44.20	46.15	47.90	49.80	51.70
20	45.65	47.95	50.15	52.60	54.90	57.30	59.60	62.25	65.00
21	47.65	49.95	52.25	54.75	57.15	59.65	62.05	64.75	67.60
22	49.50	51.90	54.35	56.85	59.40	62.05	64.45	67.30	70.20
23	.....	.....	56.45	59.05	61.65	64.35	66.95	69.85	72.85
24	53.35	56.00	58.50	61.25	63.90	66.65	69.40	72.40	75.45
26	57.30	60.05	62.80	65.65	68.55	71.50	74.35	77.55	80.75
28	61.20	64.25	67.10	70.15	73.15	76.35	79.40	82.70	86.15
30	65.20	68.45	71.45	74.70	77.85	81.25	84.45	87.90	91.55
32	.....	72.70	75.85	79.25	82.60	86.20	89.55	93.15	97.00
34	.....	.....	.....	83.90	87.40	91.20	94.70	98.45	102.50
36	.....	.....	.....	.....	.....	.....	.....	103.85	108.10

Face Inches	36 in. dia.	37 in. dia.	38 in. dia.	39 in. dia.	40 in. dia.	41 in. dia.	42 in. dia.	43 in. dia.	44 in. dia.
3	$14.30	.....	.....	.....	.....	.....	.....	.....	.....
4	16.55	$17.25	$18.00	$18.75	$19.50	$20.25	$21.05	$21.85	$22.65
5	18.85	19.65	20.50	21.30	22.15	23.00	23.85	24.75	25.65
6	21.15	22.05	23.00	23.85	24.80	25.65	26.65	27.65	28.65
7	23.50	24.50	25.55	26.40	27.45	28.40	29.45	30.55	31.65
8	25.85	26.95	28.10	29.00	30.10	31.15	32.25	33.45	34.65
9	28.25	29.45	30.70	31.60	32.80	33.90	35.10	36.40	37.70
10	30.70	31.95	33.30	34.25	35.50	36.65	37.95	39.35	40.75
11	33.15	34.50	35.95	36.80	38.20	39.45	40.80	42.30	43.80
12	35.65	37.05	38.60	39.60	40.95	42.25	43.70	45.25	46.85
13	38.15	39.65	41.30	42.30	43.70	45.05	46.60	48.25	49.95
14	40.70	42.25	44.00	45.05	46.45	47.85	49.50	51.25	53.05
15	43.25	44.90	46.75	47.80	49.25	50.70	52.45	54.25	56.15
16	45.85	47.55	49.50	50 60	52.05	53.55	55.40	57.25	59.25
17	48.45	50.25	52.30	53.40	54.90	56.40	58.35	60.30	62.40
18	51.10	52.95	55.10	56.25	57.75	59.25	61.35	63.35	65.55
19	53.75	55.70	57.95	59.10	60.60	62.15	64.35	66.40	68.70
20	67.55	70.30	73.25	75.35	78.10	80.65	83.50	86.55	89.65
21	70.25	73.10	76.15	78.15	81.05	83.70	86.60	89.80	93.00
22	72.95	75.90	79.10	80.95	84.05	86.80	89.75	93.05	96.35
23	75.70	78.70	82.00	84.05	87.05	89.85	92.95	96.30	99.70
24	78.45	81.50	84.90	87.10	90.10	92.95	96.15	99.55	103.05
26	83.95	87.25	90.85	93.05	96.15	99.10	102.50	106.15	109.90
28	89.55	92.95	96.80	99.10	102.20	105.25	108.90	112.75	116.70
30	95.15	98.70	102.80	105.20	108.30	111.40	115.30	119.30	123.50
32	100.80	104.50	108.85	111.35	114.45	117.65	121.75	125.95	130.35
34	106.50	110.35	114.95	117.55	120.65	123.95	128.25	132.65	137.20
36	112.30	116.30	121.10	123.80	126.90	130.30	134.80	139.35	144.10
38	.....	.....	127.35	130.10	133.25	136.70	141.45	146.10	151.00
40	.....	.....	.....	.....	.....	.....	148.15	152.90	157.95

Face Inches	45 in. dia.	46 in. dia.	47 in. dia.	48 in. dia.	50 in. dia.	52 in. dia.	54 in. dia.	56 in. dia.	58 in. dia.
4	$23.50	$24.35	$25.20	$26.10	$27.90	$29.80	$31.75	$33.80	$35.95
5	26.55	27.50	28.45	29.40	31.40	33.50	35.65	37.90	40.25
6	29.60	30.65	31.70	32.75	34.90	37.25	39.60	42.05	44.60
7	32.65	33.85	34.95	36.10	38.40	41.00	43.55	46.20	49.00
8	35.75	37.05	38.20	39.45	41.95	44.75	47.55	50.40	53.45

(*Continued on next page*)

Black face figures in list designate double arm pulleys.

Crown face pulleys cannot be furnished with faces wider than their diameters.

Clamp hub pulleys are sold from the above list but subject to a lesser discount.

M & G STEEL RIM WHOLE PULLEYS (*Continued*)

PRICE LIST (Subject to Discount)

Before ordering see bore limits on page 33 and important information on page 28.

Face Inches	45 in. dia.	46 in. dia.	47 in. dia.	48 in. dia.	50 in. dia.	52 in. dia.	54 in. dia.	56 in. dia.	58 in. dia.
9	$38.85	$40.25	$41.50	$42.85	$45.50	$48.55	$51.55	$54.65	$57.95
10	41.95	43.45	44.80	46.25	49.10	52.35	55.60	58.95	62.45
11	45.10	46.70	48.10	49.65	52.70	56.20	59.65	63.25	67.00
12	48.25	49.95	51.45	53.10	56.35	60.05	63.75	67.50	71.55
13	51.40	53.20	54.80	56.55	60.00	63.95	67.85	71.85	76.15
14	54.60	56.50	58.15	60.00	63.70	67.85	72.00	76.25	80.75
15	57.80	59.80	61.55	63.50	67.40	71.80	76.15	80.65	85.40
16	61.00	63.10	64.95	67.00	71.15	75.75	80.35	85.10	90.05
17	64.25	66.45	68.40	70.55	74.90	79.75	84.55	89.55	94.75
18	67.50	69.80	71.85	74.10	78.70	83.75	88.80	94.05	99.45
19	70.75	73.15	75.35	77.70	82.50	87.80	93.05	98.55	104.20
20	**92.30**	**95.60**	**98.80**	**101.75**	**107.90**	**115.20**	**122.20**	**129.75**	**137.35**
21	**95.75**	**99.20**	**102.30**	**105.50**	**111.90**	**119.40**	**119.70**	**134.45**	**142.40**
22	**99.20**	**102.75**	**105.80**	**109.25**	**115.95**	**123.65**	**131.25**	**139.15**	**147.40**
23	**102.70**	**106.30**	**109.50**	**113.00**	**119.95**	**127.85**	**135.75**	**143.80**	**152.40**
24	**106.15**	**109.90**	**113.20**	**116.80**	**123.95**	**132.10**	**140.25**	**148.50**	**157.40**
26	**113.10**	**117.05**	**120.55**	**124.40**	**132.00**	**140.75**	**149.25**	**158.05**	**167.55**
28	**120.10**	**124.30**	**127.95**	**132.00**	**140.15**	**149.25**	**158.40**	**167.75**	**177.65**
30	**127.10**	**131.45**	**135.40**	**139.65**	**148.35**	**157.85**	**167.60**	**177.45**	**187.80**
32	**134.15**	**138.65**	**142.90**	**147.35**	**156.60**	**166.55**	**176.85**	**187.20**	**198.00**
34	**141.25**	**145.85**	**150.45**	**155.15**	**164.85**	**175.35**	**186.10**	**197.00**	**208.25**
36	**148.40**	**153.05**	**158.05**	**163.00**	**173.15**	**184.20**	**195.40**	**206.85**	**218.60**
38	**155.60**	**160.25**	**165.70**	**170.90**	**181.50**	**193.10**	**204.75**	**216.80**	**229.10**
40	**162.90**	**167.40**	**173.45**	**178.85**	**189.95**	**202.05**	**214.15**	**226.80**	**239.70**

Face Inches	60 in. dia.	62 in. dia.	64 in. dia.	66 in. dia.	68 in. dia.	70 in. dia.	72 in. dia.	74 in. dia.	76 in. dia.
4	$38.20	$40.50	.....	.....	.....	.....	.....	.....	.....
5	42.65	45.15	.....	.....	.....	.....	.....	.....	.....
6	47.25	49.85	$52.65	$55.55	$58.55	$61.50	$64.55	.....	.....
7	51.85	54.60	57.50	60.50	63.60	66.70	69.90	.....	.....
8	56.50	59.40	62.40	65.50	68.70	71.95	75.30	$78.75	$82.30
9	61.20	64.25	67.35	70.55	73.85	77.85	80.75	84.35	88.05
10	65.90	69.15	72.35	75.65	79.05	82.65	86.25	90.05	93.90
11	70.65	74.10	77.40	80.80	84.30	88.10	91.80	95.80	99.85
12	75.45	79.10	82.50	86.00	89.60	93.60	97.40	101.60	105.90
13	80.30	84.15	87.65	91.25	94.95	99.15	103.10	107.50	112.05
14	85.15	89.25	92.85	96.55	100.35	104.75	108.85	113.50	118.30
15	90.05	94.40	98.10	101.90	105.80	110.40	114.70	119.60	124.65
16	95.00	99.60	103.40	107.30	111.30	116.10	120.65	125.80	131.10
17	100.00	104.85	108.75	112.75	116.85	121.90	126.70	132.10	137.65
18	105.05	110.15	114.15	118.25	122.50	127.75	132.85	138.50	144.30
19	110.10	115.50	119.60	123.80	128.20	133.70	139.10	145.00	151.10
20	**144.85**	**152.00**	**159.00**	**166.30**	**173.75**	**182.70**	**189.55**	**197.40**	**206.00**
21	**150.15**	**157.50**	**164.65**	**172.05**	**179.60**	**187.75**	**195.75**	**203.95**	**212.70**
22	**155.45**	**163.00**	**170.30**	**177.75**	**185.45**	**193.80**	**201.95**	**210.45**	**219.45**
23	**160.75**	**168.50**	**175.90**	**183.45**	**191.25**	**199.85**	**208.15**	**217.00**	**226.25**
24	**166.00**	**174.00**	**181.50**	**189.20**	**197.10**	**205.90**	**214.30**	**223.50**	**233.00**
26	**176.65**	**185.15**	**192.85**	**200.75**	**208.80**	**218.15**	**226.80**	**236.50**	**246.50**
28	**187.35**	**196.35**	**204.25**	**212.40**	**220.75**	**230.45**	**239.45**	**249.70**	**260.25**
30	**198.15**	**207.70**	**215.80**	**224.15**	**232.80**	**242.90**	**252.35**	**263.10**	**274.20**
32	**209.05**	**219.15**	**227.45**	**236.00**	**244.95**	**255.50**	**265.45**	**276.70**	**288.40**
34	**220.00**	**230.70**	**239.20**	**248.00**	**257.20**	**268.25**	**278.75**	**290.50**	**302.85**
36	**231.05**	**242.35**	**251.05**	**260.15**	**269.60**	**281.15**	**292.25**	**304.60**	**317.55**
38	**242.20**	**254.10**	**263.00**	**272.40**	**282.10**	**294.20**	**306.00**	**318.95**	**332.50**
40	**253.45**	**266.00**	**275.20**	**284.80**	**294.70**	**307.45**	**320.00**	**333.50**	**347.60**

(*Continued on next page*)

Black face figures in list designate double arm pulleys.

Clamp hub pulleys are sold from the above list but subject to a lesser discount.

M & G STEEL RIM WHOLE PULLEYS (*Continued*)

PRICE LIST (Subject to Discount)

Before ordering see bore limits on page 33 and important information on page 28

Face Inches	78 in. dia.	80 in. dia.	82 in. dia.	84 in. dia.	86 in. dia.	88 in. dia.	90 in. dia.	92 in. dia.	94 in. dia.
8	$85.95	$ 89.70	$ 93.55	$97.50	$101.55	$105.70	$109.95	$114.30	$118.75
9	91.90	95.90	100.00	104.20	108.50	112.95	117.55	122.30	127.10
10	97.95	102.20	106.55	111.00	115.60	120.30	125.25	130.35	135.50
11	104.10	108.60	113.20	117.90	122.80	127.80	133.05	138.50	144.00
12	110.40	115.15	120.00	124.95	130.15	135.45	141.00	146.70	152.60
13	116.80	121.80	126.90	132.10	137.60	143.20	149.05	155.75	161.30
14	123.30	128.55	133.90	139.40	145.20	151.05	157.20	163.65	170.10
15	129.90	135.40	141.05	146.80	152.90	159.05	165.50	172.25	179.00
16	136.60	142.35	148.30	154.35	160.75	167.20	173.90	181.00	188.00
17	143.45	149.40	155.65	162.00	168.70	175.45	182.40	189.85	197.15
18	150.40	156.60	163.15	169.80	176.80	183.80	191.05	198.70	206.40
19	157.45	163.90	170.75	177.70	185.00	192.30	199.80	207.75	215.75
20	214.80	224.45	233.65	243.20	253.90	264.30	275.00	285.80	297.80
21	221.80	231.45	241.20	251.05	261.95	272.70	283.75	295.00	307.25
22	228.85	238.75	248.80	258.95	270.05	281.15	292.55	304.25	316.70
23	235.90	246.00	256.35	266.90	278.20	289.60	301.40	313.50	326.20
24	242.90	253.35	264.00	274.90	286.35	298.00	310.20	322.85	335.70
26	256.95	267.95	279.20	290.60	302.70	315.05	327.90	341.65	354.85
28	271.25	282.80	294.60	306.70	319.45	332.30	345.85	360.05	374.20
30	285.80	297.85	310.35	323.05	336.45	349.85	364.05	378.95	393.80
32	300.60	313.15	326.30	339.65	353.70	367.70	382.50	398.10	413.65
34	315.60	328.70	342.50	356.50	371.20	385.85	401.20	417.50	433.70
36	330.85	344.50	358.95	373.60	388.95	404.30	420.20	437.15	454.05
38	346.35	360.55	375.65	391.00	407.00	423.05	439.50	457.20	474.65
40	362.10	376.85	392.60	408.65	425.35	442.10	459.75	477.20	495.45

Face Inches	96 in. dia.	98 in. dia.	100 in. dia.	102 in. dia.	104 in. dia.	106 in. dia.	108 in. dia.
8	$123.30	$127.95	$131.45	$134.95	$138.45	$142.60	$147.60
9	132.05	137.10	140.80	144.50	148.20	152.55	157.75
10	140.85	146.30	150.20	154.10	158.00	162.55	167.95
11	149.75	155.60	159.70	163.75	167.85	172.65	178.25
12	158.70	164.95	169.25	173.45	177.75	182.80	188.60
13	167.70	174.35	178.90	183.20	187.70	193.00	199.05
14	176.80	183.85	188.55	193.05	197.70	203.30	209.55
15	186.00	193.40	198.30	202.95	207.75	213.65	220.15
16	195.30	203.00	208.10	212.90	217.85	224.05	230.80
17	204.70	212.65	217.90	222.95	228.00	234.55	241.55
18	214.20	222.35	227.80	233.05	238.20	245.10	252.35
19	223.80	232.15	237.75	243.20	248.45	255.70	263.25
20	309.85	322.40	330.80	339.15	348.00	357.50	368.90
21	319.65	332.45	341.20	349.60	358.80	368.50	380.25
22	329.50	342.80	351.70	360.20	369.60	379.70	391.70
23	339.30	352.90	362.10	370.75	380.35	390.85	403.15
24	349.15	362.80	372.50	381.50	391.30	402.00	414.75
26	368.95	383.55	393.60	403.05	412.95	424.60	437.90
28	388.95	404.45	414.80	424.70	434.95	447.25	461.00
30	409.10	425.45	436.10	446.45	457.05	470.05	484.35
32	429.50	446.45	457.50	468.30	479.25	492.90	507.75
34	450.20	467.65	479.10	490.30	501.60	516.00	531.40
36	471.15	489.05	500.90	512.50	524.05	539.20	555.15
38	492.35	510.65	522.90	534.90	546.60	562.55	579.15
40	513.70	532.50	545.15	557.50	569.35	586 10	604.35

Black face figures in list designate double arm pulleys.

Clamp hub pulleys are sold from the above list but subject to a lesser discount.

M & G STEEL RIM WHOLE PULLEYS (*Continued*)

Table of Standard Hub Lengths of M & G Steel Rim Whole and Clamp Hub Pulleys listed on pages 29 to 32, also of M & G Steel Rim Split Pulleys *without bushings* listed on pages 21 and 22.

ALL DIMENSIONS GIVEN IN INCHES

Pulley Dia.	FACES									
	2	3 & 4	5	6	7 & 8	9 & 10	11 & 12	13 & 14	15 & 16	17 to 19
9 to 24	2½	3	4	4½	5½	6	7	7½	8	9
25 to 36	.....	3¼	4¼	4½	5½	6	7	7½	8	9
38 to 48	.....	3½	4½	4½	5½	6	7	7½	8¼	9¼
50 to 62	.....	4¾	.....	5¼	5¾	6¼	7¼	7¾	8½	9½
64 to 70	.....	.....	.....	5¾	6¼	6½	7½	7¾	8½	9½
72 to 88	.....	.....	.....	5¾	6½	6½	7½	7¾	8½	9½
90 to 108	.....	.....	.....	.....	6½	7½	8½	9	9½	10

Special length and faced hubs will be supplied at an extra charge. See page 56.

WIDER FACES—Pulleys with faces wider than those given above are made with double and triple sets of arms having a hub on each set of arms and the hub length is measured from outside to outside of the several hubs used. Hub lengths for such M & G double and triple arm pulleys will be furnished upon application.

Table of Standard and Maximum Bores of M & G Steel Rim Whole and Clamp Hub Pulleys listed on pages 29 to 32, also of M & G Steel Rim Split Pulleys *without bushings* listed on pages 21 and 22.

ALL DIMENSIONS GIVEN IN INCHES

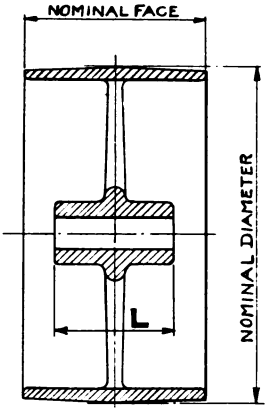
Pulley Dia.	Largest Bore at regular price	Largest Bore Pulley will take		Pulley Dia.	Largest Bore at regular price	Largest Bore Pulley will take	
		Solid Pulleys	Clamp hub pulleys			Solid Pulleys	Clamp hub pulleys
9	*1 11/16	3	1½	26 & 27	3 7/16	11	8½
10	*2 1/16	3	2	28 & 29	3 7/16	.....	9
11	2 1/16	3½	2½	30	3 7/16	.....	10
12 & 13	2 1/16	4	3	31 to 42	3 11/16	.....	.....
14 & 15	2 1/16	5	3½	43 to 48	4 1/16	.....	.....
16 & 17	2 1/16	6	4	50 to 60	4 11/16	.....	.....
18 & 19	2 11/16	7	4½	62 to 70	5 1/16	.....	.....
20	2 11/16	8½	5	72 to 80	5 11/16	.....	.....
21	3 1/16	8½	5	82 to 90	6½	.....	.....
22 & 23	3 1/16	9½	6	92 to 108	7	.....	.....
24 & 25	3 1/16	10½	8				

*Note that clamp hub pulleys can only be bored to limits given in fourth column.

For pulleys with larger bores than furnished at regular price see table of extra charges on page 57.

PULLEYS WITH SPECIAL HUBS

Important instructions for ordering pulleys with special hubs or hubs in any way departing from our standard hubs as shown on page 33 for M & G Whole Pulleys and page 51 for C. I. Pulleys, whole or split.



Example No. 1

STANDARD PULLEY WITH STANDARD HUB

Face is nominal and is always wide enough to carry belt of width given.

Diameter is nominal and measured at the crown.

Hubs and arms are central.

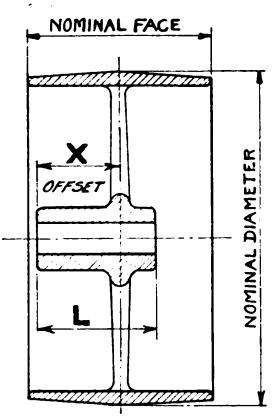
Hubs are of lengths (L) given in table.

(For M & G Steel Rim Pulleys see page 33.)

(For C. I. Pulleys see page 51.)

For Double Arm Pulleys the Double Hub is central and of the total length as given in tables mentioned.

Standard Hubs are not faced unless so ordered and for which an extra charge is made as per list on page 56.



Example No. 2

OFFSET HUBS

By "Offset Hubs" is meant hubs "offset" or moved over *relative to center line of pulley, whether single or double arm.*

The total *offset* of the longest part of hub in pulley here shown is the distance X and must be mentioned in ordering, also give the *total* length (L) of hub *if important*—thus:

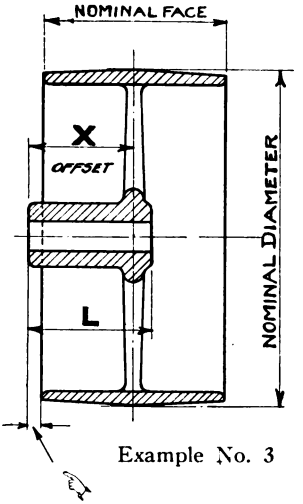
"One C. I. Pulley, 24 in. dia., 10 in. face, $2\frac{3}{16}$ bore, K. S. hub 7 inches long, offset 5 inches."

IMPORTANT NOTE—Offset hubs are always faced ON THE OFFSET OR LONGEST END only, unless both ends are ordered faced.

When taper keyways are ordered in offset hubs we always cut the deep part of keyway at the short side of the hub *unless otherwise ordered.*

PULLEYS WITH SPECIAL HUBS (*Continued*)

Also see preceding page



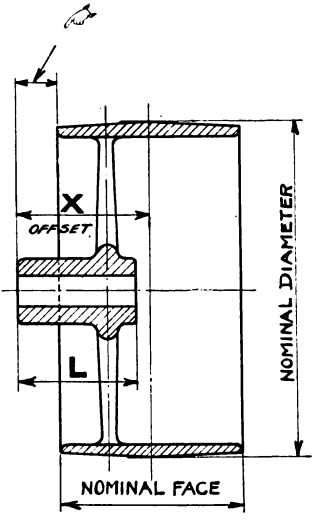
Example No. 3

OFFSET HUB—EXTENDING BEYOND THE FACE OF PULLEY ON ONE SIDE

This style of hub is to be ordered with the same wording as example No. 2 shown on preceding page, being particular to mention the facing of ends of hubs, direction of driving of taper keys, etc.

Unless otherwise ordered, we face the long end of offset hubs only.

NOTE—If this distance is important, it must be stated thus: "EXTENSION ..... inches," but in that case the distance X should not be given as the face being but nominal, the two figures would conflict.



Example No. 4

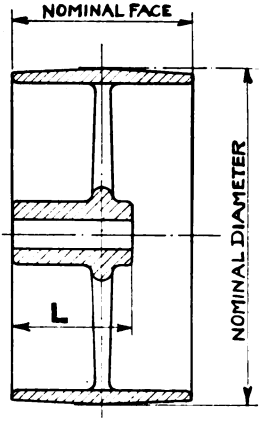
OFFSET HUB—EXTREME CASE

This cut illustrates an offset hub so far offset as to require the arms being moved out of center which in the case of *very wide* face pulleys or *double arm pulleys* cannot be done, nor can it be done with M & G Steel Rim Pulleys as these always require arms placed in center of rim.

In ordering this style use same wording as given on preceding page at example No. 2 and in case figures given make it impossible to carry out we will so advise.

IMPORTANT—See note at bottom of page 34 regarding facing of hubs and direction of driving of taper keys.

PULLEYS WITH SPECIAL HUBS (*Continued*)



Example No. 5

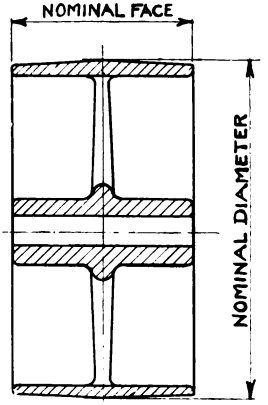
HUB—FLUSH ONE SIDE

Order this style: "One C. I. Pulley, .. inches dia., .. inches face, .. inches bore, std. K. S., hub flush one side."

Also state length of hub *if important.*

NOTE—On "flush" hub pulleys if it is desired to have the hub extend slightly beyond rim for clearance, the extension *must be specified* otherwise it will be in line with edge of rim.

We always face the "flush" end of hub but not the other end unless specified, and if Taper K. S. is ordered we cut deep part at the short side of the hub *unless otherwise ordered.*



Example No. 6

HUB—FLUSH BOTH SIDES

Order this style: "One C. I. Pulley, .. inches dia., .. inches face, .. inches bore, hub flush on both sides."

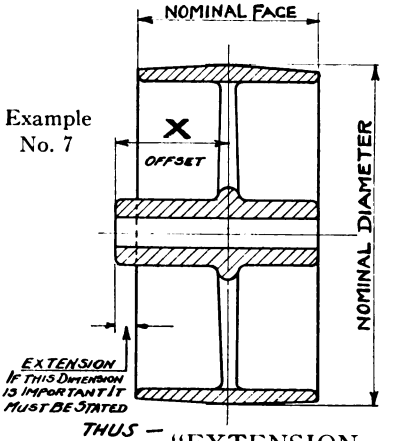
Also mention whether keyseated, set-screwed or fitted with oilers, etc.

NOTE—On "flush" hub pulleys if it is desired to have the hub extend slightly beyond rim for clearance, the amount of extension must be specified or hub will be made in line with edge of rim.

This style of hub is always furnished *faced at both ends.*

PULLEYS WITH SPECIAL HUBS (*Continued*)

Example No. 7

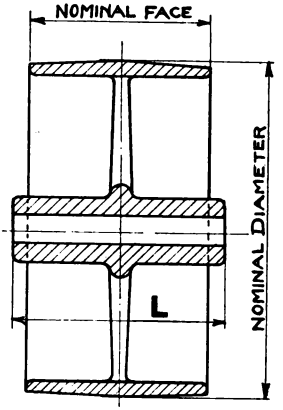


EXTRA LONG OFFSET HUB —EXTENDED ONE SIDE AND THE OTHER SIDE FLUSH

In ordering this style specify: "One C. I. Pulley, . . inches dia., . . inches face, . . inches bore, std. K. S. (or S. S.) hub offset . . inches one side, other side flush."

NOTE—The flush end of hub is always made *in line* with edge of rim and if wanted extended slightly for clearance of rim it must be so specified.

"EXTENSION . . inches," but in that case the "offset X" should not be given, as the face being but nominal the two figures would conflict.



Example No. 8

EXTRA LONG OR EXTENDED HUB—CENTRAL

In ordering this style simply specify: "Hub central, . . inches long."

If not central give the total "offset" of the longest side as well as total length.

NOTE—We always face both ends of pulley hubs that are flush or longer than standard hubs when they extend beyond edges of rim.

DO NOT FORGET—to accurately specify the bore—whether setscrewed or keyseated or both and whether taper or plain key and give dimensions, or our standards will be supplied. STRAIGHT keyseats with setscrews over are always furnished unless TAPER keyseat is specified in the order.

CAST IRON PULLEYS

Our line of Cast Iron Pulleys is very complete, and we can furnish pulleys to meet any and every requirement.

Cast Iron Pulleys are bored, turned, balanced and painted, and furnished either set-screwed or keyseated.

Pulleys up to 48 inches diameter are machine moulded, thus insuring the most perfect castings and even distribution of metal.

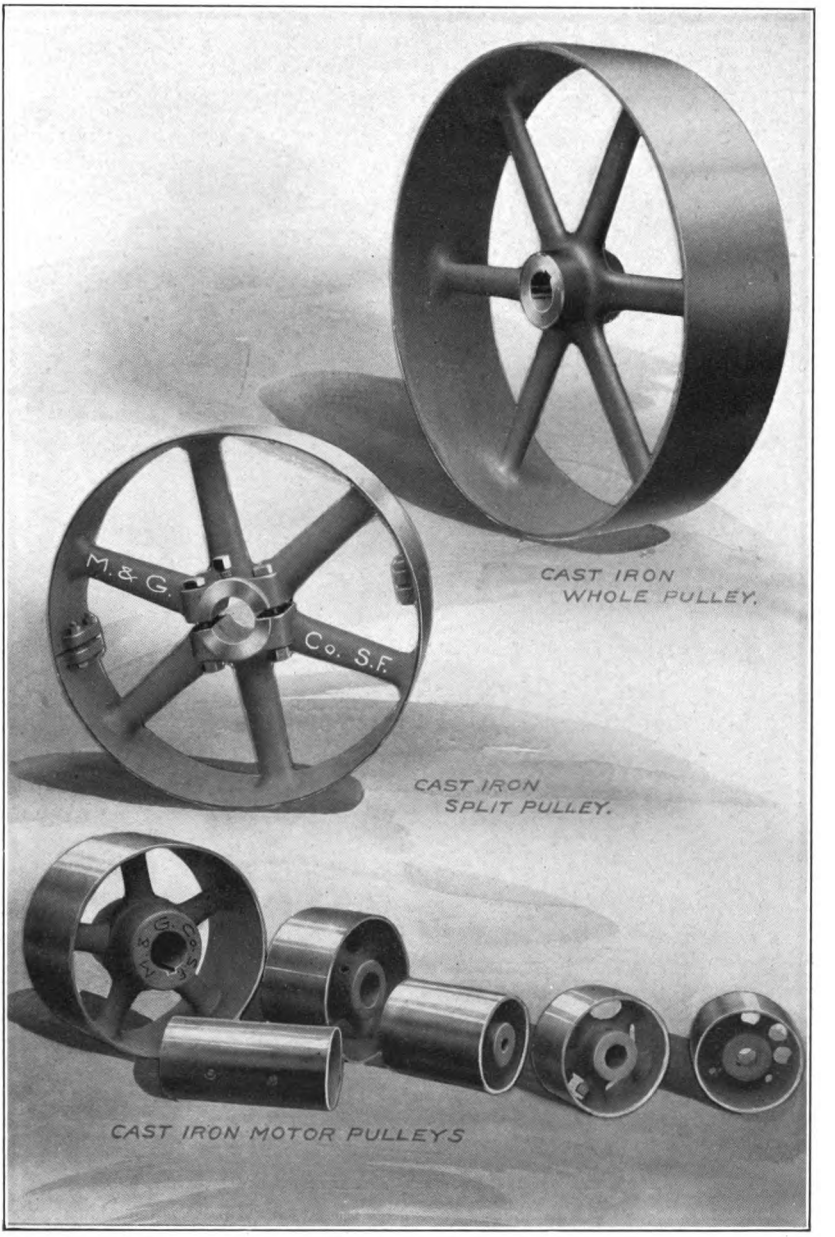
Standard Cast Iron Pulleys are made for double belt duty. Heavier pulleys will be made to order.

M & G Cast Iron Double Arm Clamp Hub Whole Pulley.

(All wide face pulleys printed with black face type in list have double rows of arms.)

Cast Iron Pulleys are listed on pages 43 to 50.

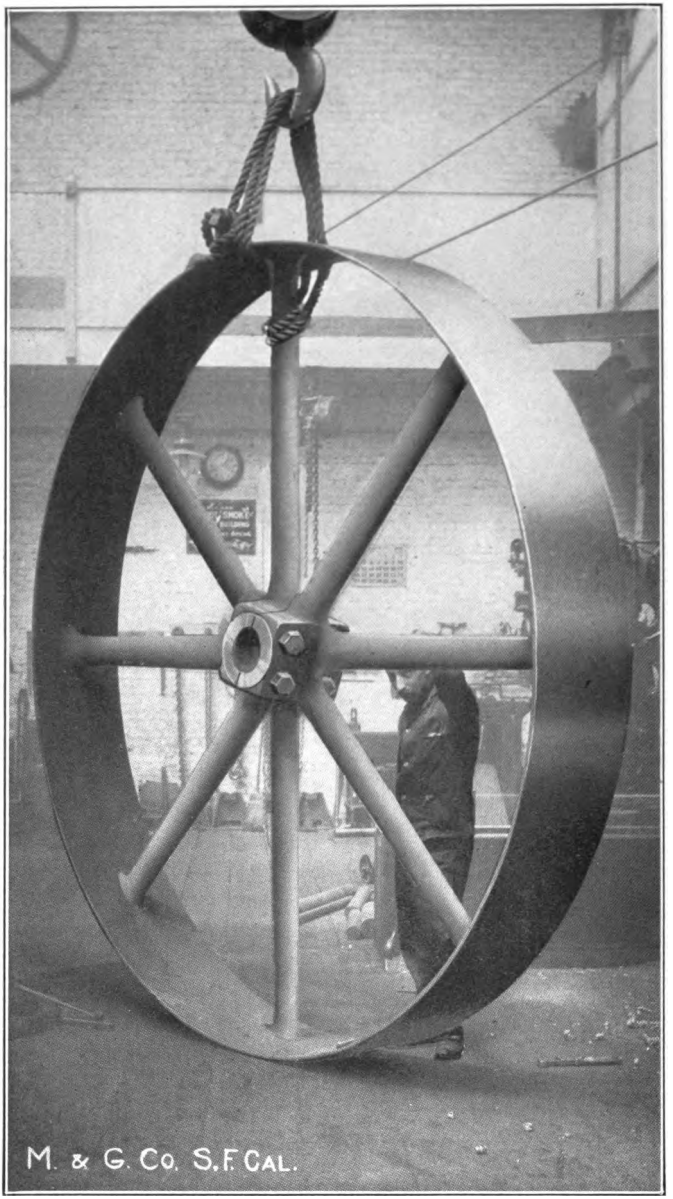
CAST IRON PULLEYS (*Continued*)



M & G CAST IRON PULLEYS

For Price List of Cast Iron Pulleys see pages 43 to 50.

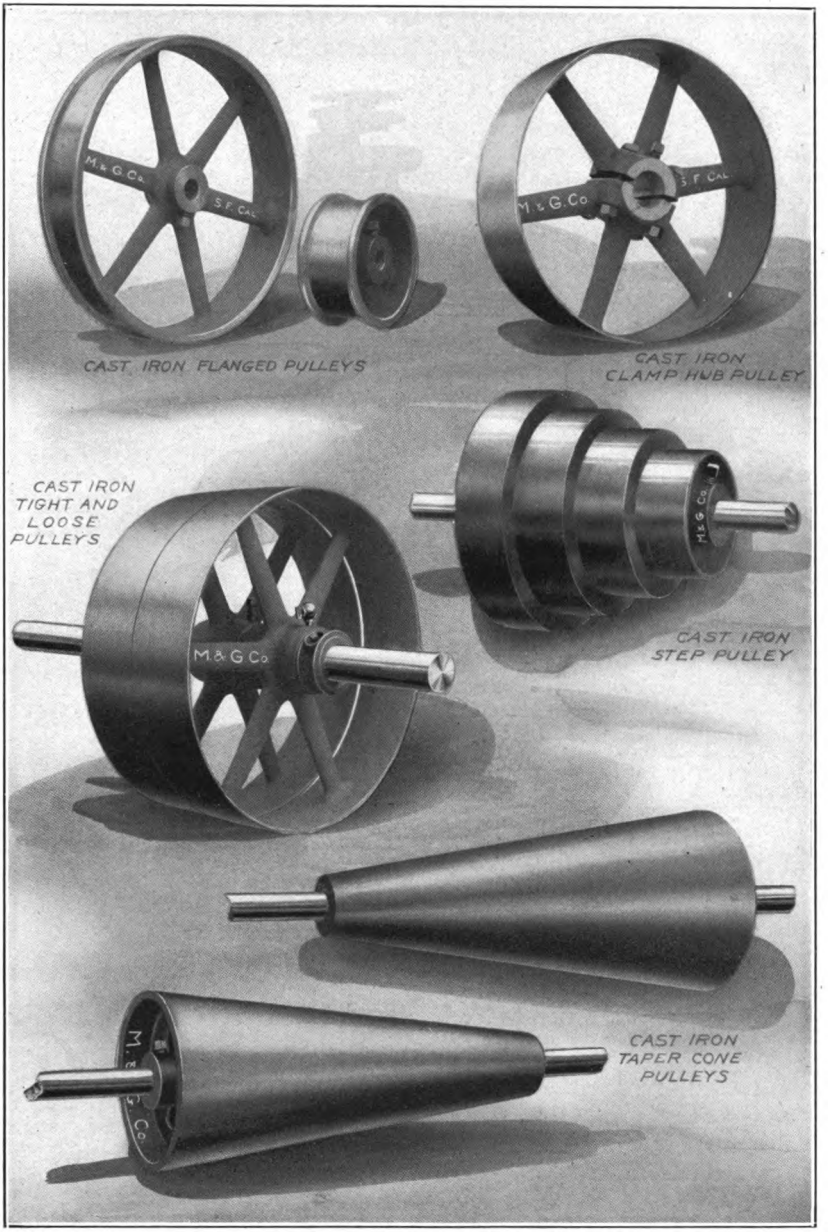
CAST IRON PULLEYS (*Continued*)



LARGE M & G SINGLE ARM CAST IRON CLAMP HUB PULLEY

For Price List of Cast Iron Pulleys see pages 43 to 50.
For table giving Horsepower of Pulleys see page 148.
For rules to figure Speed and Sizes of Pulleys see page 149.

CAST IRON PULLEYS (*Continued*)



All kinds of special Cast Iron Pulleys will be made to order.
For Price List of Cast Iron Pulleys see pages 43 to 50.

CAST IRON PULLEYS (*Continued*)

DETAILS TO BE CONSIDERED WHEN ORDERING CAST IRON PULLEYS

Also read all instructions on pages 12 to 15.

M & G Cast Iron Pulleys are made *straight* or *crown* face, either *whole*, *split*, *clamp-hub*, or in pairs, as *tight* and *loose* with suitable hubs; also single and double *flanged* pulleys, *step* pulleys, *cone* pulleys, *motor* pulleys; also with *web* or *plate centers*, *double rows of arms*, etc., etc.

Hubs of cast iron pulleys are bored and supplied with setscrews *or* straight keyseat with setscrews over *or* taper keyseat without setscrews at prices listed, and if both setscrews and taper keyseat are wanted an extra charge is made as per list on page 56.

For Price List of Cast Iron Pulleys see next page.

When cast iron pulleys are ordered with larger bores than specified in following table, an extra charge will be made as given in table on page 57.

Pulley Diameter	Bore	Pulley Diameter	Bore
3 to 5 inches	1½ in.	43 to 48 inches	4 1/16 in.
6 to 9 inches	1 13/16 in.	50 to 60 inches	4 13/16 in.
10 to 15 inches	2 1/16 in.	62 to 70 inches	5 1/16 in.
16 to 20 inches	2 13/16 in.	72 to 80 inches	5 13/16 in.
21 to 30 inches	3 1/16 in.	82 to 90 inches	6½ in.
31 to 42 inches	3 13/16 in.	92 to 120 inches	7 in.

Bores to special gauges and small fractional dimensions either metric or involving fractions less than a sixteenth of an inch will be subject to an extra charge. See page 15.

NOTE—The price list for Cast Iron Pulleys beginning on next page is for standard pulleys only. For definition of special pulleys and extra charges see pages 14 *and* 15.

Special Pulleys, such as Motor, Step, Cone Pulleys, etc., will be quoted on application.

Flanged Pulleys, see table on page 52, showing extra charges to be added to list prices for single or double flanged pulleys.

Tight and *Loose* pulleys are subject to extra charge. See list on page 56.

High Speeds—If pulleys are wanted for very high speeds, an extra charge will be made for Special Balancing. (Standard Cast Iron Pulleys are balanced for a rim speed of 3000 feet per minute.)

Crown Faced pulleys are always furnished unless straight faces are ordered.

Hubs faced one or both ends or longer than standard hubs as given in table on page 51 will be subject to an extra charge. See page 15.

Offset Arms or *Hubs—Plate Centers*—and also pulleys ordered with fractional inch or exact DIAMETERS or FACES are all subject to extra charges. See page 15.

Internally Beaded or *Ribbed* pulleys—or pulleys specified to be of *any particular weight* either heavier or lighter than standard pulleys are considered special. See pages 14 and 15.

See page 51 *for table of standard hubs of cast iron pulleys*

CAST IRON PULLEYS (*Continued*)

PRICE LIST (Subject to Discount)

Before ordering see bore limits and important information on page 42.

Face Inches	3 In. Dia.		4 In. Dia.		5 In. Dia.		6 In. Dia.		7 In. Dia.	
	Whole	Split	Whole	Split	Whole	Split	Whole	Split	Whole	Split
2	$1.95	$3.35	$2.05	$3.50	$2.15	$3.60	$2.30	$3.80	$2.50	$4.00
3	2.15	3.65	2.25	3.75	2.35	3.85	2.50	4.00	2.70	4.20
4	2.40	4.00	2.50	4.10	2.65	4.20	2.80	4.30	3.05	4.55
5	2.70	4.45	2.80	4.60	2.95	4.75	3.20	4.90	3.50	5.25
6	3.05	5.00	3.20	5.15	3.35	5.25	3.65	5.35	3.95	5.70
7	3.45	5.50	3.60	5.70	3.85	5.85	4.10	6.10	4.40	6.40
8	3.85	6.10	4.05	6.25	4.30	6.40	4.55	6.55	4.90	6.90
9	.....	.....	.....	.....	4.75	7.05	5.05	7.35	5.35	7.65
10	.....	.....	.....	.....	5.20	7.65	5.55	7.85	5.85	8.15
11	.....	.....	.....	.....	.....	.....	6.05	8.65	6.35	8.95
12	.....	.....	.....	.....	.....	.....	6.55	9.15	6.85	9.50

Face Inches	8 In. Dia.		9 In. Dia.		10 In. dia.		11 In Dia.		12 In. Dia.	
	Whole	Split	Whole	Split	Whole	Split	Whole	Split	Whole	Split
2	$2.60	$4.20	.....	.....	.....	.....	.....	.....	.....	.....
3	2.90	4.50	$3.20	$4.80	$3.45	$5.15	$3.70	$5.40	$3.95	$5.75
4	3.35	4.95	3.65	5.25	3.95	5.65	4.25	5.95	4.55	6.40
5	3.80	5.70	4.15	6.05	4.45	6.50	4.80	6.85	5.15	7.35
6	4.25	6.15	4.65	6.55	5.00	7.05	5.40	7.65	5.80	8.00
7	4.75	6.95	5.20	7.40	5.55	7.95	6.00	8.40	6.45	9 05
8	5.25	7.45	5.75	7.95	6.15	8.55	6.65	9.05	7.15	9.75
9	5.80	8.35	6.30	8.85	6.80	9.60	7.30	10.10	7.85	10.90
10	6.35	8.90	6.90	9.45	7.50	10.30	8.00	10.80	8.60	11.65
11	6.95	9.85	7.50	10.40	8.20	11.40	8.75	11.95	9.35	12.85
12	7.60	10.50	8.15	11.05	8.95	12.15	9.55	12.75	10.15	13.65
13	8.30	11.60	8.85	12.15	9.70	13.35	10.40	14.05	10.95	14.95
14	.....	.....	.....	.....	.....	.....	.....	.....	11.75	15.75
15	.....	.....	.....	.....	.....	.....	.....	.....	12.60	17.10

Face Inches	13 In. Dia.		14 In. Dia.		15 In. Dia.		16 In. Dia.		17 In. Dia.	
	Whole	Split	Whole	Split	Whole	Split	Whole	Split	Whole	Split
3	$4.20	$6.00	$4.50	$6.45	$4.80	$6.75	$5.10	$7.20	$5.40	$7.50
4	4.85	6.65	5.20	7.15	5.55	7.50	5.80	7.90	6.25	8.35
5	5.50	7.70	5.95	8.35	6.35	8.75	6.60	9.20	7.10	9.70
6	6.20	8.40	6.70	9.10	7.15	9.55	7.45	10.05	8.00	10.60
7	6.90	9.50	7.50	10.35	8.00	10.85	8.35	11.60	8.90	12.00
8	7.65	10.25	8.30	11.15	8.85	11.70	9.20	12.30	9.85	12.95
9	8.40	11.45	9.10	12.45	9.75	13.10	10.10	13.75	10.80	14.45
10	9.20	12.25	9.95	13.30	10.65	14.00	11.05	14.70	11.80	15.50
11	10.00	13.50	10.80	14.65	11.60	15.45	12.00	16.20	12.80	17.00
12	10.85	14.35	11.70	15.55	12.55	16.40	13.00	17.20	13.85	18.05
13	11.70	15.70	12.60	17.00	13.50	17.90	14.00	18.80	14.90	19.75
14	12.60	16.60	13.50	17.90	14.50	18.90	15.00	19.80	16.00	20.80
15	13.50	18.00	14.45	19.40	15.50	20.45	16.05	21.45	17.10	22.50
16	.....	.....	.....	.....	.....	.....	17.20	22.65	18.25	23.65
17	.....	.....	.....	.....	.....	.....	18.20	24.25	19.40	25.45

Face Inches	18 In. Dia.		19 In. Dia.		20 In. Dia.		21 In. Dia.		22 In. Dia.	
	Whole	Split	Whole	Split	Whole	Split	Whole	Split	Whole	Split
3	$5.70	$7.95	$6.05	$8.30	$6.40	$8.85	$6.75	$9.20	$7.10	$9.75
4	6.65	8.90	7.05	9.30	7.45	9.90	7.85	10.30	8.30	10.95
5	7.60	10.40	8.10	10.95	8.55	11.60	9.00	12.05	9.50	12.80
6	8.55	11.35	9.15	11.95	9.65	12.70	10.15	13.20	10.75	14.05
7	9.55	12.90	10.25	13.60	10.80	14.45	11.35	15.00	12.00	15.95
8	10.55	13.90	11.35	14.70	11.95	15.60	12.55	16.20	13.30	17.25
9	11.60	15.55	12.40	16.35	13.15	17.45	13.80	18.10	14.60	19.25
10	12.65	16.60	13.55	17.50	14.35	18.65	15.05	19.35	15.95	20.60

(*Continued on next page*)

Clamp Hub Pulleys—To obtain price take half of the combined whole and split pulley prices.
For wide face conveyor and elevator head pulleys see page 53.

CAST IRON PULLEYS (*Continued*)

PRICE LIST (Subject to Discount)

Before ordering see bore limits and important information on page 42.

Face Inches	18 In. Dia.		19 In. Dia.		20 In. Dia.		21 In. Dia.		22 In. Dia.	
	Whole	Split	Whole	Split	Whole	Split	Whole	Split	Whole	Split
11	$13.75	$18.30	$14.70	$19.25	$15.60	$20.55	$16.35	$21.30	$17.30	$22.65
12	14.85	19.40	15.90	20.45	16.85	21.80	17.65	22.60	18.70	24.05
13	15.90	21.10	17.10	22.30	18.15	23.80	19.00	24.65	20.10	26.20
14	17.05	22.25	18.35	23.55	19.45	25.10	20.35	26.00	21.55	27.65
15	18.25	24.10	19.60	25.45	20.80	27.15	21.75	28.10	23.00	29.85
16	19.45	25.30	20.90	26.75	22.15	28.50	23.15	29.50	24.50	31.35
17	20.70	27.25	22.20	28.75	23.55	30.65	24.60	31.70	26.00	33.65
18	.....	.....	23.55	30.10	24.95	32.05	26.05	33.15	27.55	35.20
19	.....	.....	24.90	32.15	26.40	34.25	27.55	35.40	29.10	37.55
20	.....	.....	.....	.....	.....	.....	.....	.....	30.70	39.15
"	.....	.....	.....	.....	**31.60**	**39.45**	**33.10**	**40.95**	**35.10**	**43.40**
21	.....	.....	.....	.....	.....	.....	.....	.....	32.35	41.65
22	.....	.....	.....	.....	**34.35**	**43.00**	**35.95**	**44.60**	**38.05**	**47.35**
24	.....	.....	.....	.....	**37.15**	**46.60**	**38.85**	**48.30**	**41.15**	**51.30**
26	.....	.....	.....	.....	**40.00**	**50.30**	**41.90**	**52.20**	**44.25**	**55.30**
28	.....	.....	.....	.....	**42.90**	**54.05**	**44.90**	**56.05**	**47.40**	**59.35**
30	.....	.....	.....	.....	.....	.....	.....	.....	**50.60**	**63.50**

Face Inches	23 In. Dia.		24 In. Dia.		25 In. Dia.		26 In. Dia.		27 In. Dia.	
	Whole	Split	Whole	Split	Whole	Split	Whole	Split	Whole	Split
3	$7.50	$10.15	$7.90	$10.70	$8.35	$11.15	$8.80	$11.80	$9.30	$12.30
4	8.75	11.40	9.25	12.05	9.75	12.55	10.30	13.30	10.85	13.85
5	10.05	13.35	10.60	14.15	11.20	14.75	11.80	15.65	12.45	16.30
6	11.35	14.65	12.00	15.55	12.65	16.20	13.35	17.20	14.05	17.90
7	12.70	16.65	13.40	17.65	14.15	18.40	14.90	19.50	15.70	20.30
8	14.05	18.00	14.85	19.10	15.65	19.90	16.50	21.10	17.35	21.95
9	15.45	20.10	16.30	21.30	17.20	22.20	18.10	23.50	19.05	24.45
10	16.85	21.50	17.80	22.80	18.75	23.75	19.75	25.15	20.75	26.15
11	18.30	23.65	19.30	25.05	20.35	26.10	21.40	27.60	22.50	28.70
12	19.75	25.10	20.85	26.60	21.95	27.70	23.10	29.30	24.25	30.45
13	21.25	27.35	22.40	28.95	23.60	30.15	24.80	31.85	26.05	33.10
14	22.75	28.85	24.00	30.55	25.25	31.80	26.55	33.60	27.85	34.90
15	24.30	31.15	25.60	32.95	26.95	34.30	28.30	36.20	29.70	37.60
16	25.85	32.70	27.25	34.60	28.65	36.00	30.10	38.00	31.55	39.45
17	27.45	35.10	28.90	37.10	30.40	38.60	31.90	40.70	33.45	42.25
18	29.05	36.70	30.60	38.80	32.15	40.35	33.75	42.55	35.35	44.15
19	30.70	39.15	32.30	41.35	33.95	43.00	35.60	45.30	37.30	47.00
20	32.35	40.80	34.05	43.10	35.75	44.80	37.50	47.20	39.25	48.95
"	**37.10**	**45.55**	**39.20**	**48.25**	**41.25**	**50.30**	**43.45**	**53.15**	**45.65**	**55.35**
21	34.05	43.35	35.80	45.75	37.60	47.55	39.40	50.05	41.25	51.90
22	.....	.....	.....	.....	39.45	49.40	41.35	52.00	43.25	53.90
"	**40.25**	**49.55**	**42.45**	**52.40**	**44.75**	**54.70**	**47.10**	**57.75**	**49.50**	**60.15**
24	**43.45**	**53.60**	**45.85**	**56.70**	**48.30**	**59.15**	**50.80**	**62.40**	**53.35**	**64.95**
26	**46.70**	**57.75**	**49.30**	**61.10**	**51.90**	**63.70**	**54.55**	**67.15**	**57.30**	**69.90**
28	**50.00**	**61.95**	**52.80**	**65.55**	**55.55**	**68.30**	**58.35**	**71.95**	**61.20**	**74.80**
30	**53.35**	**66.25**	**56.35**	**70.10**	**59.25**	**73.00**	**62.20**	**76.85**	**65.20**	**79.85**

Face Inches	28 In. Dia.		29 In. Dia.		30 In. Dia.		31 In. Dia.		32 In. Dia.	
	Whole	Split	Whole	Split	Whole	Split	Whole	Split	Whole	Split
3	$9.80	$13.05	$10.30	$13.55	$10.85	$14.35	$11.40	$14.90	$11.95	$15.75
4	11.45	14.65	12.00	15.25	12.65	16.15	13.25	16.75	13.90	17.70
5	13.10	17.25	13.75	17.90	14.45	18.90	15.15	19.60	15.85	20 65
6	14.80	18.95	15.50	19.65	16.30	20.75	17.05	21.50	17.85	22.65
7	16.50	21.45	17.30	22.25	18.15	23.45	19.00	24.30	19.85	25.55
8	18.25	23.20	19.10	24.05	20.05	25.35	20.95	26.25	21.90	27.60
9	20.00	25.80	20.95	26.75	21.95	28.15	22.95	29.15	23.95	30.60

(*Continued on next page*)

Black face figures in list designate double arm pulleys.

Clamp Hub Pulleys—To obtain price take half of the combined whole and split pulley price.

For wide face conveyor and elevator head pulleys see page 53.

CAST IRON PULLEYS (*Continued*)

PRICE LIST (Subject to Discount)

Before ordering see bore limits and important information on page 42.

Face Inches	28 In. Dia.		29 In. Dia.		30 In. Dia.		31 In. Dia.		32 In. Dia.	
	Whole	Split	Whole	Split	Whole	Split	Whole	Split	Whole	Split
10	$21.80	$27.60	$22.80	$28.60	$23.90	$30.10	$24.95	$31.15	$26.05	$32.70
11	23.60	30.25	24.70	31.35	25.85	32.95	27.00	34.10	28.15	35.75
12	25.45	32.10	26.60	33.25	27.85	34.95	29.05	36.15	30.30	37.90
13	27.30	35.00	28.55	36.10	29.85	37.90	31.15	39.20	32.50	41.10
14	29.20	36.75	30.50	38.05	31.90	39.95	33.25	41.30	34.70	43.30
15	31.10	39.55	32.50	40.95	33.95	42.95	35.40	44.40	36.95	46.55
16	33.05	41.50	34.50	42.95	36.00	45.00	37.55	46.55	39.20	48.80
17	34.90	44.30	36.55	45.95	38.10	48.10	39.75	49.75	41.50	52.15
18	36.90	46.30	38.60	48.00	40.25	50.25	41.95	51.95	43.80	54.45
19	38.90	49.25	40.70	51.05	42.40	53.40	44.20	55.20	46.15	57.85
20	40.95	51.30	42.80	53.15	44.60	55.60	46.45	57.45	48.50	60.20
"	**47.95**	**58.20**	**50.15**	**60.50**	**52.60**	**63.60**	**54.90**	**65.90**	**57.30**	**69.00**
21	43.00	53.35	44.95	56.30	46.80	58.85	48.75	60.80	50.90	63.70
22	45.10	56.45	47.10	58.45	49.05	61.10	51.10	63.15	53.30	66.10
"	**51.90**	**63.25**	**54.35**	**65.70**	**56.85**	**68.90**	**59.40**	**71.45**	**62.05**	**74.85**
23	.....	.....	49.30	61.65	51.30	64.40	53.45	66.55	55.70	69.60
24	**56.00**	**68.35**	**58.50**	**70.85**	**61.25**	**74.35**	**63.90**	**77.00**	**66.65**	**80.55**
26	**60.05**	**73.45**	**62.80**	**76.20**	**65.65**	**79.85**	**68.55**	**82.75**	**71.50**	**86.55**
28	**64.25**	**78.70**	**67.10**	**81.55**	**70.15**	**85.45**	**73.15**	**88.45**	**76.35**	**92.45**
30	**68.45**	**84.00**	**71.45**	**87.00**	**74.70**	**91.15**	**77.85**	**94.30**	**81.25**	**98.65**
32	**72.70**	**89.35**	**75.85**	**92.50**	**79.25**	**96.85**	**82.60**	**100.20**	**86.20**	**104.80**
34	.....	.....	.....	.....	**83.90**	**102.70**	**87.40**	**106.20**	**91.20**	**111.05**

Face Inches	33 In. Dia.		34 In. Dia.		35 In. Dia.		36 In. Dia.		37 In. Dia.	
	Whole	Split	Whole	Split	Whole	Split	Whole	Split	Whole	Split
3	$12.50	$16.30	$13.10	$17.20	$13.70	$17.80	$14.30	$18.70	.....	.....
4	14.50	18.30	15.20	19.30	15.90	20.00	16.55	20.95	$17.25	$21.65
5	16.55	21.35	17.30	22.45	18.10	23.25	18.85	24.40	19.65	25.15
6	18.60	23.40	19.45	24.60	20.35	25.50	21.15	26.65	22.05	27.55
7	20.70	26.30	21.60	27.70	22.60	28.70	23.50	30.00	24.50	31.00
8	22.80	29.45	23.80	29.90	24.90	31.00	25.85	32.35	26.95	33.45
9	24.95	31.60	26.05	33.15	27.20	34.30	28.25	35.80	29.45	37.00
10	27.10	33.75	28.30	35.40	29.55	36.65	30.70	38.25	31.95	39.50
11	29.30	36.90	30.60	38.70	31.90	40.00	33.15	41.75	34.50	43.10
12	31.55	39.20	32.90	41.00	34.30	42.40	35.65	44.25	37.05	45.65
13	33.80	42.40	35.25	44.40	36.70	45.85	38.15	47.85	39.65	49.35
14	36.10	44.70	37.60	46.75	39.15	48.30	40.70	50.40	42.25	51.95
15	38.40	48.00	40.00	50.20	41.60	51.80	43.25	54.05	44.90	55.70
16	40.75	50.35	42.40	52.60	44.10	54.30	45.85	56.65	47.55	58.35
17	43.10	53.75	44.85	56.15	46.60	58.15	48.45	60.40	50.25	62.20
18	45.50	56.15	47.30	59.60	49.15	60.55	51.10	63.05	52.95	64.85
19	47.90	59.60	49.80	62.20	51.70	64.10	53.75	66.85	55.70	68.80
20	50.35	62.05	52.30	64.70	54.30	66.70	56.45	69.55	58.45	71.55
"	**59.60**	**71.30**	**62.25**	**74.65**	**65.00**	**77.40**	**67.55**	**80.65**	**70.30**	**83.40**
21	52.80	65.60	54.85	68.40	56.95	70.50	59.15	73.45	61.25	75.55
22	55.30	68.10	57.40	70.95	59.60	73.15	61.90	76.20	64.10	78.40
"	**64.45**	**77.25**	**67.30**	**80.85**	**70.20**	**83.75**	**72.95**	**87.25**	**75.90**	**90.20**
23	57.80	71.70	60.00	74.70	62.30	77.00	64.65	80.15	66.95	82.45
24	60.35	74.25	62.65	77.35	65.00	79.70	67.40	82.90	69.85	85.35
"	**69.40**	**83.30**	**72.40**	**87.10**	**75.45**	**90.15**	**78.45**	**93.95**	**81.50**	**97.00**
26	**74.35**	**89.40**	**77.55**	**93.45**	**80.75**	**96.65**	**83.95**	**100.70**	**87.25**	**104.00**
28	**79.40**	**95.60**	**82 70**	**99.80**	**86.15**	**103.25**	**89.55**	**107.55**	**92.95**	**110.95**
30	**84.45**	**101.85**	**87.90**	**106.25**	**91.55**	**109.90**	**95.15**	**114.45**	**98.70**	**118.00**
32	**89.55**	**108.15**	**93.15**	**112.75**	**97.00**	**116.60**	**100.80**	**121.40**	**104.50**	**125.10**
34	**94.70**	**114.55**	**98.45**	**119.35**	**102.50**	**123.40**	**106.50**	**128.45**	**110.35**	**132.30**
36	.....	.....	**103.85**	**126.05**	**108.10**	**130.30**	**112.30**	**135.60**	**116.30**	**139.60**

(*Continued on next page*)

Black face figures in list designate double arm pulleys.

Clamp Hub Pulleys—To obtain price take half of the combined whole and split pulley price.

For wide face conveyor and elevator head pulleys see page 53.

CAST IRON PULLEYS (*Continued*)

PRICE LIST (Subject to Discount)

Before ordering see bore limits and important information on page 42.

Face Inches	38 In. Dia.		39 In. Dia.		40 In. Dia.		41 In. Dia.		42 In. Dia.	
	Whole	Split	Whole	Split	Whole	Split	Whole	Split	Whole	Split
4	$18.00	$22.75	$18.75	$23.50	$19.50	$24.60	$20.25	$25.35	$21.05	$26.50
5	20.50	26.45	21.30	27.20	22.15	28.45	23.00	29.30	23.85	30.55
6	23.00	28.90	23.85	29.75	24.80	31.10	25.65	31.95	26.65	33.35
7	25.55	32.50	26.40	33.35	27.45	34.85	28.40	35.80	29.45	37.30
8	28.10	35.05	29.00	35.95	30.10	37.50	31.15	38.55	32.25	40.10
9	30.70	38.75	31.60	39.65	32.80	41.35	33.90	42.45	35.10	44.15
10	33.30	41.35	34.25	42.30	35.50	44.05	36.65	45.20	37.95	47.00
11	35.95	45.10	36.80	45.95	38.20	47.90	39.45	49.15	40.80	51.02
12	38.60	47.75	39.60	48.75	40.95	50.65	42.25	51.95	43.70	53.95
13	41.30	51.60	42.30	52.60	43.70	54.60	45.05	55.95	46.60	57.80
14	44.00	54.30	45.05	55.35	46.45	57.35	47.85	58.75	49.50	60.70
15	46.75	58.20	47.80	59.25	49.25	61.35	50.70	62.80	52.45	65.20
16	49.50	60.95	50.60	62.05	52.05	64.15	53.55	65.65	55.40	68.15
17	52.30	64.95	53.40	66.05	54.90	68.25	56.40	69.75	58.35	72.40
18	55.10	67.75	56.25	68.90	57.75	71.10	59.25	72.60	61.35	75.40
19	57.95	70.80	59.10	72.95	60.60	75.20	62.15	76.80	64.35	79.70
20	60.80	74.65	62.00	75.85	63.60	78.10	65.05	79.65	67.35	82.70
"	**73.25**	**87.05**	**75.35**	**89.20**	**78.10**	**92.70**	**80.65**	**95.25**	**83.50**	**98.85**
21	63.65	78.75	64.90	80.00	66.40	82.30	67.95	83.85	70.30	87.00
22	66.55	81.65	67.85	82.95	69.35	85.25	70.90	86.80	73.35	90.05
"	**79.10**	**94.20**	**80.95**	**96.05**	**84.05**	**99.95**	**86.80**	**102.70**	**89.75**	**106.45**
23	69.45	85.80	70.80	87.15	72.30	89.50	73.85	91.05	76.30	94.35
24	72.35	88.70	73.80	90.15	75.35	92.55	76.80	94.00	79.40	97.45
"	**84.90**	**101.25**	**87.10**	**103.45**	**90.10**	**107.30**	**92.95**	**110.15**	**96.15**	**114.20**
26	**90.85**	**108.50**	**93.05**	**110.70**	**96.15**	**114.70**	**99.10**	**117.65**	**102.50**	**121.95**
28	**96.80**	**115.75**	**99.10**	**118.05**	**102.20**	**122.10**	**105.25**	**125.15**	**108.90**	**129.75**
30	**102.80**	**123.10**	**105.20**	**125.50**	**108.30**	**129.60**	**111.40**	**132.70**	**115.30**	**137.60**
32	**108.85**	**130.50**	**111.35**	**133.00**	**114.45**	**137.15**	**117.65**	**140.35**	**121.75**	**145.50**
34	**114.95**	**138.00**	**117.55**	**140.60**	**120.65**	**144.80**	**123.95**	**148.10**	**128.25**	**153.50**
36	**121.10**	**145.55**	**123.80**	**148.25**	**126.90**	**152.50**	**130.30**	**155.90**	**134.80**	**161.55**
38	**127.35**	**153.15**	**130.10**	**155.90**	**133.25**	**160.25**	**136.70**	**163.70**	**141.45**	**169.65**
40	.....	.....	.....	.....	.....	.....	.....	.....	**148.15**	**178.00**

Face Inches	43 In. Dia.		44 In. Dia.		45 In. Dia.		46 In. Dia.		47 In. Dia.	
	Whole	Split	Whole	Split	Whole	Split	Whole	Split	Whole	Split
4	$21.85	$27.30	$22.65	$28.50	$23.50	$29.35	$24.35	$30.60	$25.20	$31.45
5	24.75	31.45	25.65	32.80	26.55	33.70	27.50	35.10	28.45	36.05
6	27.65	34.35	28.65	35.80	29.60	36.75	30.65	38.25	31.70	39.30
7	30.55	38.40	31.65	40.00	32.65	41.00	33.85	42.70	34.95	43.80
8	33.45	41.30	34.65	43.00	35.75	44.10	37.05	45.90	38.20	47.05
9	36.40	45.45	37.70	47.30	38.85	48.45	40.25	50.40	41.50	51.65
10	39.35	48.40	40.75	50.30	41.95	51.55	43.45	53.60	44.80	54.95
11	42.30	52.55	43.80	54.65	45.10	55.95	46.70	58.15	48.10	59.55
12	45.25	55.50	46.85	57.70	48.25	59.10	49.95	61.40	51.45	62.90
13	48.25	59.45	49.95	61.80	51.40	63.25	53.20	65.70	54.80	67.30
14	51.25	62.45	53.05	64.90	54.60	66.45	56.50	69.00	58.15	70.65
15	54.25	67.00	56.15	69.60	57.80	71.25	59.80	73.95	61.55	75.70
16	57.25	70.00	59.25	72.70	61.00	74.45	63.10	77.25	64.95	79.10
17	60.30	74.35	62.40	77.20	64.25	79.05	66.45	82.00	68.40	83.95
18	63.35	77.40	65.55	80.35	67.50	82.30	69.80	85.50	71.85	87.40
19	66.40	81.75	68.70	84.85	70.75	86.90	73.15	90.10	75.35	92.30
20	69.50	84.85	71.80	87.95	74.05	90.20	76.55	93.50	78.85	95.80
"	**86.55**	**101.90**	**89.65**	**105.80**	**92.30**	**108.45**	**95.60**	**112.55**	**98.80**	**115.75**
21	72.60	89.30	75.05	92.60	77.35	94.90	79.95	98.35	82.40	100.80
22	75.75	92.45	78.25	95.80	80.70	98.25	83.40	101.80	85.95	104.35
"	**93.05**	**109.75**	**96.35**	**113.90**	**99.20**	**116.75**	**102.75**	**121.15**	**105.80**	**124.20**
23	78.90	96.95	81.45	100.40	84.05	103.00	86.85	106.70	89.50	109.35

(*Continued on next page*)

Black face figures in list designate double arm pulleys.

Clamp Hub Pulleys—To obtain price take half of the combined whole and split pulley price.

CAST IRON PULLEYS (*Continued*)

PRICE LIST (Subject to Discount)

Before ordering see bore limits and important information on page 42.

Face Inches	43 In. Dia.		44 In. Dia.		45 In. Dia.		46 In. Dia.		47 In. Dia.	
	Whole	Split	Whole	Split	Whole	Split	Whole	Split	Whole	Split
24	$82.05	$100.10	$84.75	$103.70	$87.50	$106.45	$90.30	$110.15	$93.10	$112.95
"	99.55	117.60	103.05	122.00	106.15	125.10	109.90	129.75	113.20	133.05
26	106.15	125.60	109.90	130.30	113.10	133.50	117.05	138.40	120.55	141.90
28	112.75	133.60	116.70	138.55	120.10	141.95	124.30	147.15	127.95	150.80
30	119.30	141.60	123.50	146.85	127.10	150.45	131.45	155.85	135.40	159.80
32	125.95	149.70	130.35	155.20	134.15	159.00	138.65	164.60	142.90	168.85
34	132.65	157.90	137.20	163.60	141.25	167.65	145.85	173.40	150.45	178.00
36	139.35	166.10	144.10	178.00	148.40	176.35	153.05	182.20	158.05	187.20
38	146.10	174.30	151.00	180.45	155.60	185.05	160.25	190.95	165.70	196.40
40	152.90	182.75	157.95	189.10	162.90	194.05	167.40	199.85	173.45	205.90

Face Inches	48 In. Dia.		50 In. Dia.		52 In. Dia.		54 In. Dia.		56 In. Dia.	
	Whole	Split	Whole	Split	Whole	Split	Whole	Split	Whole	Split
4	$26.10	$32.75	$27.90	$35.00	$29.80	$37.35	$31.75	$39.75	$33.80	$42.30
5	29.40	37.45	31.40	39.95	33.50	42.55	35.65	45.20	37.90	48.00
6	32.75	40.80	34.90	43.45	37.25	46.30	39.60	49.15	42.05	52.15
7	36.10	45.45	38.40	48.30	41.00	51.45	43.55	54.55	46.20	57.80
8	39.45	48.80	41.95	51.85	44.75	55.20	47.55	58.55	50.40	62.00
9	42.85	53.55	45.50	56.80	48.55	60.45	51.55	64.05	54.65	67.80
10	46.25	57.95	49.10	60.40	52.35	64.25	55.60	68.10	58.95	72.10
11	49.65	61.70	52.70	65.40	56.20	69.55	59.65	73.65	63.25	77.95
12	53.10	65.15	56.35	69.05	60.05	73.40	63.75	77.75	67.50	82.20
13	56.55	69.70	60.00	73.85	63.95	78.50	67.85	83.10	71.85	87.85
14	60.00	73.15	63.70	77.55	67.85	82.40	72.00	87.25	76.25	92.25
15	63.50	78.35	67.40	83.00	71.80	88.15	76.15	93.25	80.65	98.55
16	67.00	81.85	71.15	86.75	75.75	92.10	80.35	97.45	85.10	103.00
17	70.55	86.85	74.90	92.00	79.75	97.65	84.55	103.25	89.55	109.10
18	74.10	90.40	78.70	95.80	83.75	101.65	88.80	107.50	94.05	113.60
19	77.70	95.45	82.50	101.10	87.80	107.25	93.05	113.35	98.55	119.75
20	81.30	99.05	86.35	104.95	91.85	111.30	97.35	117.65	103.10	124.30
"	101.75	119.50	107.90	128.00	115.20	134.60	122.20	142.50	129.75	151.00
21	84.95	104.20	90.25	110.40	95.90	116.95	101.65	123.60	107.65	130.55
22	88.60	107.85	94.15	116.30	100.00	121.05	106.00	127.95	112.25	135.15
"	109.25	128.50	115.95	137.10	123.65	144.70	131.25	153.20	139.15	162.05
23	92.25	113.00	98.10	119.80	104.10	126.75	110.35	133.95	116.85	141.45
24	95.95	116.70	102.05	123.75	108.20	130.85	114.70	138.30	121.45	146.05
"	116.80	137.45	123.95	146.20	132.10	154.75	140.25	163.85	148.50	173.10
26	124.40	146.70	132.00	155.30	140.75	165.00	149.25	174.55	158.05	184.40
28	132.00	155.85	140.15	165.05	149.25	175.20	158.40	185.40	167.75	195.85
30	139.65	165.10	148.35	174.90	157.85	185.50	167.60	196.35	177.45	207.35
32	147.35	174.40	156.60	184.80	166.55	195.90	176.85	207.35	187.20	218.90
34	155.15	183.85	164.85	194.75	175.35	206.45	186.10	218.40	197.00	230.55
36	163.00	193.35	173.15	204.75	184.20	217.05	195.40	229.50	206.85	242.25
38	170.90	202.85	181.50	214.75	193.10	227.65	204.75	240.60	216.80	254.00
40	178.85	212.60	189.95	225.05	202.05	238.50	214.15	251.95	226.80	266.00

Face Inches	58 In. Dia.		60 In. Dia.		62 In. Dia.		64 In. Dia.		66 In. Dia.	
	Whole	Split	Whole	Split	Whole	Split	Whole	Split	Whole	Split
4	$35.95	$44.95	$38.20	$47.70	$40.50	$50.55	.....	.....	.....	.....
5	40.25	50.90	42.65	53.85	45.15	56.95	.....	.....	.....	.....
6	44.60	55.25	47.25	58.45	49.85	61.65	$52.65	$65.06	$55.55	$68.55
7	49.00	61.20	51.85	64.65	54.60	68.05	57.50	71.60	60.50	75.25
8	53.45	65.65	56.50	69.30	59.40	72.85	62.40	76.50	65.50	80.25
9	57.95	71.75	61.20	75.65	64.25	79.40	67.35	83.20	70.55	87.10
10	62.45	76.25	65.90	80.35	69.15	84.30	72.35	88.20	75.65	92.20
11	67.00	82.40	70.65	86.75	74.10	90.95	77.40	95.00	80.80	99.15
12	71.55	86.95	75.45	91.55	79.10	95.95	82.50	110.00	86.00	104.35

(*Continued on next page*)

Black face figures in list designate double arm pulleys.

Clamp Hub Pulleys—To obtain price take half of the combined whole and split pulley price.

CAST IRON PULLEYS (*Continued*)

PRICE LIST (Subject to Discount)

Before ordering see bore limits and important information on page 42.

Face Inches	58 In. Dia.		60 In. Dia.		62 In. Dia.		64 In. Dia.		66 In. Dia.	
	Whole	Split	Whole	Split	Whole	Split	Whole	Split	Whole	Split
13	$76.15	$92.90	$80.30	$97.80	$84.15	$102.45	$87.65	$106.75	$91.25	$111.15
14	80.75	97.50	85.15	102.65	89.25	107.55	92.85	111.95	96.55	116.45
15	85.40	104.10	90.05	109.55	94.40	114.75	98.10	119.30	101.90	123.95
16	90.05	108.75	95.00	114.50	99.60	119.95	103.40	124.60	107.30	129.35
17	94.75	115.15	100.00	121.25	104.85	127.00	108.75	131.80	112.75	136.70
18	99.45	119.85	105.05	126.30	110.15	132.30	114.15	137.20	118.25	142.20
19	104.20	126.30	110.10	133.10	115.50	139.45	119.60	144.50	123.80	149.65
20	108.95	131.05	115.20	138.20	120.90	144.85	125.10	150.00	129.45	155.30
21	113.95	137.80	120.35	145.15	126.35	152.15	130.65	157.45	135.20	163.00
22	118.60	142.45	125.55	150.35	131.85	157.65	136.30	163.10	141.05	168.85
"	**147.40**	**171.25**	**155.45**	**180.25**	**163.00**	**188.50**	**170.30**	**197.10**	**177.75**	**205.55**
23	123.50	149.10	130.75	157.35	137.40	165.05	142.05	170.20	146.95	176.70
24	128.45	154.05	136.00	162.60	142.95	170.60	147.90	176.60	152.95	182.70
"	**157.40**	**183.00**	**166.00**	**192.60**	**174.00**	**201.65**	**181.50**	**210.20**	**189.20**	**218.95**
26	**167.55**	**194.95**	**176.65**	**205.10**	**185.15**	**214.70**	**192.85**	**223.50**	**200.75**	**232.50**
28	**177.65**	**206.85**	**187.35**	**217.65**	**196.35**	**227.80**	**204.25**	**236.85**	**212.40**	**246.15**
30	**187.80**	**218.85**	**198.15**	**230.35**	**207.70**	**241.10**	**215.80**	**250.40**	**224.15**	**259.95**
32	**198.00**	**230.90**	**209.05**	**243.15**	**219.15**	**254.50**	**227.45**	**264.05**	**236.00**	**273.85**
34	**208.25**	**243.05**	**220.00**	**256.05**	**230.70**	**268.05**	**239.20**	**277.80**	**248.00**	**287.95**
36	**218.60**	**255.30**	**231.05**	**269.05**	**242.35**	**281.70**	**251.05**	**291.75**	**260.15**	**302.20**
38	**229.10**	**267.65**	**242.20**	**282.10**	**254.10**	**295.40**	**263.00**	**305.70**	**272.40**	**316.50**
40	**239.70**	**280.30**	**253.45**	**295.45**	**266.00**	**309.45**	**275.20**	**320.10**	**284.80**	**331.15**

Face Inches	68 In. Dia.		70 In. Dia.		72 In. Dia.		74 In. Dia.		76 In. Dia.	
	Whole	Split	Whole	Split	Whole	Split	Whole	Split	Whole	Split
6	$58.55	$72.20	$61.50	$75.80	$64.55	$79.50	.....	.....	.....	.....
7	63.60	79.05	66.70	82.85	69.90	86.75	.....	.....	.....	.....
8	68.70	84.15	71.95	88.10	75.30	92.15	$78.75	$96.35	$82.30	$100.65
9	73.85	91.15	77.85	95.30	80.75	99.55	84.35	103.95	88.05	108.45
10	79.05	96.35	82.65	100.70	86.25	105.05	90.05	109.65	93.90	114.30
11	84.30	103.45	88.10	108.05	91.80	112.55	95.80	117.40	99.85	122.30
12	98.60	108.75	93.60	113.55	97.40	118.15	101.60	123.20	105.90	128.35
13	94.95	115.70	99.15	120.75	103.10	125.55	107.50	130.85	112.05	136.30
14	100.35	121.10	104.75	126.35	108.85	131.30	113.50	136.85	118.30	142.55
15	105.80	128.75	110.40	134.25	114.70	139.45	119.60	145.30	124.65	151.30
16	111.30	134.25	116.10	139.95	120.65	145.40	125.80	151.50	131.10	157.75
17	116.85	141.75	121.90	147.75	126.70	153.50	132.10	159.90	137.65	166.45
18	122.50	147.40	127.75	153.60	132.85	159.65	138.50	166.30	144.30	173.10
19	128.20	155.05	133.70	161.55	139.10	167.95	145.00	174.90	151.10	182.05
20	133.95	160.80	139.75	167.60	145.45	174.30	151.60	181.50	158.00	188.95
21	139.80	168.65	145.90	175.80	151.90	182.85	158.35	190.40	165.00	198.15
22	145.75	174.60	152.15	182.05	158.45	189.40	165.20	197.25	172.10	205.25
"	**185.45**	**214.30**	**193.80**	**223.70**	**201.95**	**232.90**	**210.45**	**242.40**	**219.45**	**252.50**
23	151.80	181.65	158.50	190.45	165.15	198.20	172.15	206.35	179.30	114.65
24	157.95	188.80	164.90	196.85	171.95	205.00	179.20	213.40	186.60	221.95
"	**197.10**	**227.95**	**205.90**	**237.85**	**214.30**	**247.35**	**223.50**	**257.70**	**233.00**	**268.35**
26	**208.80**	**241.70**	**218.15**	**252.20**	**226.80**	**262.00**	**236.50**	**272.90**	**246.50**	**284.10**
28	**220.75**	**255.70**	**230.45**	**266.60**	**239.45**	**276.80**	**249.70**	**288.30**	**260.25**	**300.10**
30	**232.80**	**269.85**	**242.90**	**281.20**	**252.35**	**291.90**	**263.10**	**303.95**	**274.20**	**316.35**
32	**244.95**	**284.10**	**255.50**	**295.95**	**265.45**	**307.20**	**276.70**	**319.80**	**288.40**	**332.85**
34	**257.20**	**298.50**	**268.25**	**310.90**	**278.75**	**322.75**	**290.50**	**335.90**	**302.85**	**349 65**
36	**269.60**	**313.05**	**281.15**	**326.00**	**292.25**	**338.50**	**304.60**	**352.30**	**317.55**	**366.70**
38	**282.10**	**327.65**	**294.20**	**341.20**	**306.00**	**354.45**	**318.95**	**368.90**	**332.50**	**383.95**
40	**294.70**	**342.55**	**307.45**	**356.80**	**320.00**	**370.85**	**333.50**	**385.90**	**347.60**	**401.55**
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

(*Continued on next page*)

Black face figures in list designate double arm pulleys.

Clamp Hub Pulleys—To obtain price take half of the combined whole and split pulley price.

CAST IRON PULLEYS (*Continued*)

PRICE LIST (Subject to Discount)

Before ordering see bore limits and important information on page 42.

Face Inches	78 In. Dia.		80 In. Dia.		82 In. Dia.		84 In. Dia.		86 In. Dia.	
	Whole	Split	Whole	Split	Whole	Split	Whole	Split	Whole	Split
8	$85.95	$105.05	$89.70	$109.60	$93.55	$114.25	$97.50	$119.00	$101.55	$123.90
9	91.90	113.10	95.90	117.95	100.00	122.90	104.20	127.95	108.50	133.15
10	97.95	119.15	102.20	124.25	106.55	129.45	111.00	134.75	115.60	140.25
11	104.10	127.40	108.60	132.80	113.20	138.30	117.90	143.90	122.80	149.75
12	110.40	133.70	115.15	139.35	120.00	145.10	124.95	150.95	130.15	157.10
13	116.80	141.95	121.80	147.90	126.90	153.95	132.10	160.10	137.60	166.60
14	123.30	148.45	128.55	154.65	133.90	160.95	139.40	167.40	145.20	174.20
15	129.90	157.50	135.40	164.00	141.05	170.65	146.80	177.40	152.90	184.55
16	136.60	164.20	142.35	170.95	148.30	177.90	154.35	184.95	160.75	192.40
17	143.45	173.25	149.40	180.25	155.65	187.55	162.00	194.95	168.70	202.75
18	150.40	180.20	156.60	187.45	163.15	195.05	169.80	202.75	176.80	210.85
20	164.60	196.60	171.30	204.40	178.45	212.65	185.75	221.05	193.35	229.80
22	179.20	213.45	186.40	221.80	194.25	230.80	202.20	239.90	210.35	249.25
24	194.20	230.70	202.10	239.80	210.40	249.30	219.00	259.10	227.80	269.15
"	**242.90**	**279.40**	**253.35**	**291.05**	**264.00**	**302.90**	**274.90**	**315.00**	**286.35**	**327.70**
26	**256.95**	**295.75**	**267.95**	**307.00**	**279.20**	**320.50**	**290.60**	**333.15**	**302.70**	**346.55**
28	**271.25**	**312.35**	**282.80**	**325.20**	**294.60**	**338.30**	**306.70**	**351.70**	**319.45**	**365.80**
30	**285.80**	**329.25**	**297.85**	**342.65**	**310.35**	**356.50**	**323.05**	**370.55**	**336.45**	**385.35**
32	**300.60**	**346.40**	**313.15**	**360.35**	**326.30**	**374.90**	**339.65**	**389.65**	**353.70**	**405.15**
34	**315.60**	**363.80**	**328.70**	**378.35**	**342.50**	**393.60**	**356.50**	**409.05**	**371.20**	**425.25**
36	**330.85**	**381.45**	**344.50**	**396.60**	**358.95**	**412.55**	**373.60**	**428.70**	**388.95**	**445.60**
38	**346.35**	**399.30**	**360.55**	**415.05**	**375.65**	**431.70**	**391.00**	**448.60**	**407.00**	**466.20**
40	**362.10**	**417.60**	**376.85**	**433.95**	**392.60**	**451.30**	**408.65**	**468.95**	**425.35**	**487.30**

Face Inches	88 In. Dia.		90 In. Dia.		92 In. Dia.		94 In. Dia.		96 In. Dia.	
	Whole	Split	Whole	Split	Whole	Split	Whole	Split	Whole	Split
8	$105.70	$128.90	$109.95	$134.00	$114.30	$139.25	$118.75	$144.60	$123.30	$150.05
9	112.95	138.50	117.55	144.00	122.30	149.70	127.10	155.45	132.05	161.35
10	120.30	145.85	125.25	151.70	130.35	157.75	135.50	163.85	140.85	170.15
11	127.80	155.70	133.05	161.90	138.50	168.35	144.00	174.85	149.75	181.60
12	135.45	163.35	141.00	169.85	146.70	176.55	152.60	183.45	158.70	190.55
13	143.20	173.20	149.05	180.05	155.75	187.80	161.30	194.40	167.70	201.85
14	151.05	181.05	157.20	188.20	163.65	195.70	170.10	203.20	176.80	210.95
15	159.05	191.75	165.50	199.25	172.25	207.10	179.00	214.95	186.00	223.05
16	167.20	199.90	173.90	207.65	181.00	215.85	188.00	223.95	195.30	232.35
17	175.45	210.60	182.40	218.65	189.85	227.25	197.15	235.70	204.70	244.40
18	183.80	218.95	191.05	227.30	198.70	236.10	206.40	244.95	214.20	253.90
20	200.95	238.55	208.70	247.45	216.90	256.85	225.20	266.35	233.50	275.85
22	218.55	258.65	227.00	268.30	235.60	278.15	244.40	288.20	253.20	298.25
24	236.70	279.30	245.70	289.55	254.80	299.95	264.00	310.45	273.30	321.05
"	**298.00**	**340.60**	**310.20**	**354.05**	**322.85**	**368.00**	**335.70**	**382.15**	**349.15**	**396.90**
26	**315.05**	**360.20**	**327.90**	**374.35**	**341.65**	**389.45**	**354.85**	**404.00**	**368.95**	**419.45**
28	**332.30**	**380.00**	**345.85**	**394.90**	**360.05**	**410.50**	**374.20**	**426.05**	**388.95**	**442.20**
30	**349.85**	**400.15**	**364.05**	**415.75**	**378.95**	**432.10**	**393.80**	**448.40**	**409.10**	**465.15**
32	**367.70**	**420.60**	**382.50**	**436.85**	**398.10**	**453.95**	**413.65**	**471.00**	**429.50**	**488.35**
34	**385.85**	**441.40**	**401.20**	**458.25**	**417.50**	**476.10**	**433.70**	**493.85**	**450.20**	**511.90**
36	**404.30**	**462.50**	**420.20**	**479.95**	**437.15**	**498.50**	**454.05**	**517.00**	**471.15**	**535.70**
38	**423.05**	**483.85**	**439.50**	**501.90**	**457.20**	**521.25**	**474.65**	**540.35**	**492.35**	**559.70**
40	**442.10**	**505.70**	**459.75**	**525.00**	**477.20**	**544.25**	**495.45**	**564.10**	**513.70**	**584.05**

Face Inches	98 In. Dia.		100 In. Dia.		102 In. Dia.		104 In. Dia.		106 In. Dia.	
	Whole	Split	Whole	Split	Whole	Split	Whole	Split	Whole	Split
8	$127.95	$155.65	$131.45	$160.10	$134.95	$164.55	$138.45	$169.05	$142.60	$174.20
9	137.10	167.40	148.80	172.10	144.50	176.80	148.20	181.55	152.55	186.95
10	146.30	176.60	150.20	181.50	154.10	186.40	158.00	191.35	162.55	196.95
11	155.60	188.50	159.70	193.65	163.75	198.75	167.85	203.95	172.65	209.85
12	164 95	197.85	169.25	203.20	173.45	208.45	177.75	213.85	182.80	220.00

(*Continued on next page*)

Black face figures in list designate double arm pulleys.

Clamp Hub Pulleys—To obtain price take half of the combined whole and split pulley price.

CAST IRON PULLEYS (*Continued*)

PRICE LIST (Subject to Discount)

Before ordering see bore limits and important information on page 42.

Face Inches	98 In. Dia.		100 In. Dia.		102 In. Dia.		104 In. Dia.		106 In. Dia.	
	Whole	Split	Whole	Split	Whole	Split	Whole	Split	Whole	Split
13	$174.35	$209.60	$178.90	$215.25	$183.20	$220.65	$187.70	$226.30	$193.00	$232.75
14	183.85	219.10	188.55	224.90	193.05	230.50	197.70	236.30	203.30	243.05
15	193.40	231.60	198.30	237.65	202.95	243.45	207.75	249.45	213.65	256.55
16	203.00	241.20	208.10	247.45	212.90	253.40	217.85	259.55	224.05	266.95
17	212.65	253.55	217.90	260.00	222.95	266.25	228.00	272.55	234.55	280.35
18	222.35	263.25	227.80	269.90	233.05	276.35	238.20	282.75	245.10	290.90
20	242.05	285.65	247.80	292.65	253.40	299.50	258.80	306.20	266.40	315.10
22	262.15	308.50	268.15	315.80	273.95	322.90	279.65	329.95	287.85	339.50
24	282.70	331.80	288.70	339.15	294.70	346.50	300.70	353.90	309.70	364.30
26	**383.55**	**424.45**	**393.60**	**446.90**	**403.05**	**457.75**	**412.95**	**469.10**	**424.60**	**482.20**
28	**404.45**	**459.15**	**414.80**	**470.95**	**424.70**	**482.30**	**434.95**	**494.05**	**447.25**	**507.85**
30	**425.45**	**483.00**	**436.10**	**495.15**	**446.45**	**507.00**	**457.05**	**519.15**	**470.05**	**533.70**
32	**446.45**	**506.85**	**457.50**	**519.45**	**468.30**	**531.80**	**479.25**	**544.35**	**492.90**	**559.60**
34	**467.65**	**530.95**	**479.10**	**544.00**	**490.30**	**556.80**	**501.60**	**569.75**	**516.00**	**585.80**
36	**489.05**	**555.25**	**500.90**	**568.75**	**512.50**	**582.00**	**524.05**	**595.25**	**539.20**	**612.10**
38	**510.65**	**579.70**	**522.90**	**593.65**	**534.90**	**607.35**	**546.60**	**620.80**	**562.55**	**638.50**
40	**532.50**	**604.60**	**545.15**	**619.00**	**557.50**	**633.10**	**569.35**	**646.75**	**586.10**	**665.30**

Face Inches	108 In. Dia.		110 In. Dia.		112 In. Dia.		114 In. Dia.		116 In. Dia.	
	Whole	Split	Whole	Split	Whole	Split	Whole	Split	Whole	Split
8	$147.60	$180.20	$152.70	$186.35	$157.90	$192.60	$163.20	$198.95	$168.60	$205.45
9	157.75	193.20	163.05	199.60	168.50	206.15	174.05	212.80	179.70	219.60
10	167.95	203.40	173.45	210.00	179.20	216.85	185.00	223.75	190.90	230.80
11	178.25	216.55	183.95	223.40	190.00	230.60	196.05	235.80	202.20	245.15
12	188.60	226.90	194.55	234.00	200.85	241.45	207.15	248.90	213.55	256.50
13	199.05	239.95	205.20	247.30	211.80	255.10	218.35	262.85	225.00	270.75
14	209.55	250.45	215.95	258.05	222.85	266.15	229.65	274.15	236.55	282.30
15	220.15	264.25	226.80	272.15	233.95	280.55	241.00	288.85	248.15	297.30
16	230.80	274.90	237.70	283.05	245.15	291.75	252.45	300.30	259.85	309.00
17	241.55	288.60	248.70	297.05	256.40	306.05	263.95	314.90	271.65	323.95
18	252.35	299.40	259.80	308.15	267.70	317.35	275.50	326.45	283.50	335 80
20	274.70	324.70	282.20	333.55	290.60	343.30	298.90	352.95	307.45	362.90
22	296.40	349.40	304.95	359.35	313.80	369.60	322.60	379.80	331.65	390.30
24	318.80	374.80	328.00	385.45	337.30	396.20	346.70	407.05	356.20	418.05
26	**437.90**	**496.95**	**451.45**	**512.00**	**465.95**	**528.00**	**480.35**	**543.90**	**495 00**	**560.10**
28	**461.00**	**523.10**	**475.10**	**538.75**	**490.25**	**555.45**	**505.25**	**572.00**	**520.40**	**588.75**
30	**484.35**	**549.55**	**498.95**	**565.75**	**514.70**	**583.10**	**530.20**	**600.20**	**545.95**	**617.60**
32	**507.75**	**576.05**	**522.95**	**592.90**	**539.35**	**610.95**	**555.40**	**628.65**	**571.65**	**646.60**
34	**531.40**	**602.85**	**547.15**	**620.30**	**564.10**	**640.65**	**580.70**	**657.25**	**597.65**	**675 95**
36	**555.15**	**629.75**	**571.55**	**637.90**	**588.95**	**668.80**	**606.10**	**685.95**	**623.70**	**705.35**
38	**579.15**	**656.85**	**596.10**	**675.60**	**614.00**	**697.10**	**631.75**	**714.85**	**650.00**	**734.95**
40	**604.35**	**685.35**	**620.95**	**703.80**	**641.50**	**726.20**	**657.60**	**744.15**	**676.40**	**764.85**

	118 In. Dia.					120 In. Dia.				
Face Inches	Whole	Split	Face Inches	Whole	Split	Face Inches	Whole	Split	Face Inches	Whole	Split
8	$174.10	$212.05	**20**	$315.80	$372.65	8	$179.80	$218.85	**20**	$324.25	$382.50
9	185.50	226.55	**22**	340.60	400.70	9	191.40	233.60	**22**	349.65	411.20
10	196.95	238.00	**24**	365.80	429.15	10	203.05	245.25	**24**	375.50	440.35
11	208.45	252.60	**26**	**509.85**	**576.50**	11	214.80	260.15	**26**	**524.70**	**592.90**
12	220.05	264.20	**28**	**535.70**	**605.65**	12	226.60	271.95	**28**	**551.00**	**622.00**
13	231.75	278.75	**30**	**561.65**	**634.95**	13	238.50	286.75	**30**	**577.50**	**652.45**
14	243.50	290.50	**32**	**587.85**	**664.50**	14	250.45	298.70	**32**	**604.25**	**682.60**
15	255.30	305.75	**34**	**614.25**	**694.30**	15	262.50	314.25	**34**	**631.20**	**713.00**
16	267.20	317.65	**36**	**640.85**	**724.30**	16	274.65	326.40	**36**	**658.35**	**743.60**
17	279.20	332.85	**38**	**667.70**	**754.50**	17	286.90	341.90	**38**	**686.60**	**775.25**
18	291.30	344.95	**40**	**694.75**	**785.10**	18	299.25	354.25	**40**	**713.35**	**805.60**

Black face figures in list designate double arm pulleys.

Clamp Hub Pulleys—To obtain price take half of the combined whole and split pulley price.

CAST IRON PULLEYS

STANDARD HUB LENGTH OF ALL PULLEYS GIVEN IN STANDARD PULLEY LIST, PAGES 43 to 50.

(ALL DIMENSIONS GIVEN IN INCHES)

NOTE—Look for desired *Face* of pulley first, then look opposite the proper diameter in this face.

SINGLE ARM PULLEYS

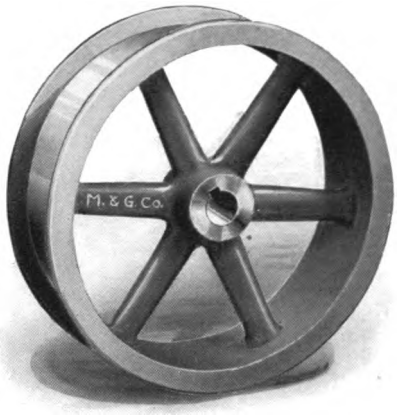
Pulley Diameters both incl.	Pulley Face	Length of Hub	Pulley Diameters both incl.	Pulley Face	Length of Hub	Pulley Diameters both incl.	Pulley Face	Length of Hub	Pulley Diameters both incl.	Pulley Face	Length of Hub
3 to 8	2	2	84 to 94	11	8	16 to 60	16	8	84 to 94	20	11½
3 to 36	3	3	96 to 108	11	8½	62 to 70	16	8½	96 to 108	20	12
3 to 62	4	3½	110 to 120	11	9	72 to 82	16	9	110 to 120	20	12½
3 to 62	5	4	6 to 60	12	7	84 to 94	16	9½	22 to 60	21	10½
3 to 60	6	4½	62 to 70	12	7½	96 to 108	16	10	62 to 70	21	11
62 to 72	6	5	72 to 82	12	8	110 to 120	16	10½	72 to 82	21	11½
3 to 60	7	5	84 to 94	12	8½	16 to 60	17	8½	84 to 94	21	12
62 to 72	7	5½	96 to 108	12	9	62 to 70	17	9	96 to 108	21	12½
3 to 60	8	5½	110 to 120	12	9½	72 to 82	17	9½	110 to 120	21	13
62 to 70	8	6	8 to 60	13	7	84 to 94	17	10	25 to 60	22	11
72 to 82	8	6½	62 to 70	13	7½	96 to 108	17	10½	62 to 70	22	11½
84 to 94	8	7	72 to 82	13	8	110 to 120	17	11	72 to 82	22	12
96 to 108	8	7½	84 to 94	13	8½	19 to 60	18	9	84 to 94	22	12½
5 to 60	9	6	96 to 108	13	9	62 to 70	18	9½	96 to 108	22	13
62 to 70	9	6½	110 to 120	13	9½	72 to 82	18	10	110 to 120	22	13½
72 to 82	9	7	12 to 60	14	7½	84 to 94	18	10½	29 to 60	23	11½
84 to 94	9	7½	62 to 70	14	8	96 to 108	18	11	62 to 70	23	12
96 to 108	9	8	72 to 82	14	8½	110 to 120	18	11½	72 to 82	23	12½
5 to 60	10	6	84 to 94	14	9	19 to 60	19	9½	84 to 94	23	13
62 to 70	10	6½	96 to 108	14	9½	62 to 70	19	10	96 to 108	23	13½
72 to 82	10	7	110 to 120	14	10	72 to 82	19	10½	110 to 120	23	14
84 to 94	10	7½	12 to 60	15	8	84 to 94	19	11	33 to 60	24	12
96 to 108	10	8	62 to 70	15	8½	96 to 108	19	11½	62 to 70	24	12½
110 to 120	10	8½	72 to 82	15	9	110 to 120	19	12	72 to 82	24	13
6 to 60	11	6½	84 to 94	15	9½	22 to 60	20	10	84 to 94	24	13½
62 to 70	11	7	96 to 108	15	10	62 to 70	20	10½	96 to 108	24	14
72 to 82	11	7½	110 to 120	15	10½	72 to 82	20	11	110 to 120	24	14½

DOUBLE ARM PULLEYS

Pulley Diameters both incl.	Pulley Face	Length of Hub	Pulley Diameters both incl.	Pulley Face	Length of Hub	Pulley Diameters both incl.	Pulley Face	Length of Hub	Pulley Diameters both incl.	Pulley Face	Length of Hub
20 to 60	20	16	72 to 82	23	19	96 to 108	28	23½	34 to 60	36	27
62 to 70	20	16½	84 to 94	23	19½	110 to 120	28	24	62 to 70	36	27½
72 to 82	20	17	96 to 108	23	20	22 to 60	30	23	72 to 82	36	28
84 to 94	20	17½	110 to 120	23	20½	62 to 70	30	23½	84 to 94	36	28½
96 to 108	20	18	20 to 60	24	19	72 to 82	30	24	96 to 108	36	29
110 to 120	20	18½	62 to 70	24	19½	84 to 94	30	24½	110 to 120	36	29½
22 to 60	21	16½	72 to 82	24	20	96 to 108	30	25	38 to 60	38	28½
62 to 70	21	17	84 to 94	24	20½	110 to 120	30	25½	62 to 70	38	29
72 to 82	21	17½	96 to 108	24	21	28 to 60	32	24	72 to 82	38	29½
84 to 94	21	18	110 to 120	24	21½	62 to 70	32	24½	84 to 94	38	30
96 to 108	21	18½	20 to 60	26	20	72 to 82	32	25	96 to 108	38	30½
110 to 120	21	19	62 to 70	26	20½	84 to 94	32	25½	110 to 120	38	31
20 to 60	22	17½	72 to 82	26	21	96 to 108	32	26	42 to 60	40	30
62 to 70	22	18	84 to 94	26	21½	110 to 120	32	26½	62 to 70	40	30½
72 to 82	22	18½	96 to 108	26	22	30 to 60	34	25½	72 to 82	40	31
84 to 94	22	19	110 to 120	26	22½	62 to 70	34	26	84 to 94	40	31½
96 to 108	22	19½	20 to 60	28	21½	72 to 82	34	26½	96 to 108	40	32
110 to 120	22	20	62 to 70	28	22	84 to 94	34	27	110 to 120	40	32½
29 to 60	23	18	72 to 82	28	22½	96 to 108	34	27½			
62 to 70	23	18½	84 to 94	28	23	110 to 120	34	28			

For price list for facing Pulley Hubs see page 56. For diagrams of Special Hubs see pages 34 to 37.

FLANGED CAST IRON PULLEYS



M & G CAST IRON DOUBLE FLANGED PULLEY

(Also made with three flanges or but one flange if desired.)

When Double Flanged Cast Iron Pulleys are wanted, add the following list prices to the list prices of Standard Cast Iron Pulleys, given on pages 43 to 50.

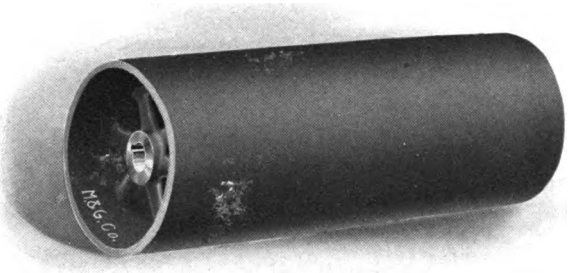
ADDITIONAL PRICE LIST—(Subject to same discount as cast iron pulley to which it is applied.)

Diameter Inches	List Price	Diameter Inches	List Price
6 and 7	$2.40	28 and 29	$14.70
8 and 9	3.10	30 and 31	16.40
10 and 11	3.90	32 and 33	18.20
12 and 13	4.70	34 and 35	20.05
14 and 15	5.65	36 and 37	21.95
16 and 17	6.60	38 and 39	24.10
18 and 19	7.60	40 and 41	26.35
20 and 21	8.80	42 and 43	28.75
22 and 23	10.15	44 and 45	31.30
24 and 25	11.50	46 and 47	33.85
26 and 27	13.05	48 and 50	37.60

If pulleys are wanted with one flange only use one-half of the above list.

For pulleys with three flanges add one-half more to the above list.

CAST IRON CONVEYOR PULLEYS



Cast Iron Conveyor Pulleys are heavy pulleys carefully machined, bored and keyseated.

They have double rows of arms in the wider faces, and are made in two pieces in faces wider than 30 inches.

If rubber or canvas covering is desired see list for covering on page 55.

Prices below are subject to bore limitations as given on page 57.

In ordering specify Straight or Crown Face.

PRICE LIST (Subject to Discount)

Dia. in.	Face in.	List Price	Dia. in.	Face in.	List Price	Dia. in.	Face in.	List Price	Dia. in.	Face in.	List Price	Dia. in.	Face in.	List Price
	14	$ 9.05		20	$21.15		20	$29.60		20	$41.95		20	$59.25
	15	9.85		22	23.70		22	33.00		22	46.50		22	65.35
8	16	10.75		24	26.25		24	36.45		24	51.10		24	71.45
	17	11.70		26	28.85		26	39.90		26	55.65		26	77.50
	18	12.65	14	28	31.40	20	28	43.30		28	60.20		28	83.65
	14	9.60		30	33.95		30	46.75	26	30	64.80	32	30	89.70
	15	10.45		32	36.50		32	50.20		32	69.35		32	95.80
9	16	11.40		34	39.05		34	53.60		34	73.90		34	101.85
	17	12.45		36	41.60		36	57.10		36	78.50		36	107.90
	18	13.55		38	44.20		38	60.50		38	83.00		38	113.95
							40	64.00		40	87.60		40	120.05
	14	10.50		18	20.90									
	15	11.40		20	23.65		20	33.15		20	47.00		20	66.70
10	16	12.40		22	26.50		22	36.90		22	52.00		22	73.35
	17	13.50		24	29.30		24	40.70		24	57.10		24	80.10
	18	14.60		26	32.10		26	44.50		26	62.10		26	86.75
	14	11.30	16	28	34.90		28	48.30		28	67.15		28	93.50
	15	12.30		30	37.75	22	30	52.10	28	30	72.15	34	30	100.20
11	16	13.30		32	40.50		32	55.90		32	77.10		32	106.80
	17	14.40		34	43.35		34	59.70		34	82.20		34	113.50
	18	15.50		36	46.20		36	63.50		36	87.25		36	120 10
				38	49.00		38	67.30		38	92.20		38	126.80
	16	14.15		40	51.80		40	71.10		40	97.30		40	133.50
	18	16.50												
	20	18.80		18	23.40		20	37.25		20	52.50		20	75.20
	22	21.10		20	26.50		22	41.45		22	58.10		22	82.50
	24	23.50		22	29.60		24	45.60		24	63.65		24	89.90
	26	25.80		24	32.70		26	49.80		26	69.20		26	97.30
12	28	28.10		26	35.80		28	53.90		28	74.80		28	104.60
	30	30.40		28	38.95	24	30	58.10	30	30	80.35		30	112.00
	32	32.75	18	30	42.05		32	62.25		32	85.90	36	32	119.30
	34	35.05		32	45.20		34	66.45		34	91.45		34	126.70
	36	37.40		34	48.30		36	70.60		36	97.00		36	134.00
	38	39.70		36	51.45		38	74.75		38	102.50		38	141.35
	16	16.00		38	54.50		40	78.90		40	108.10		40	148.70
14	18	18.60		40	57.60									

For Cast Iron Pulleys with narrower faces than listed above see Standard Pulley list pages 43 to 50.

FLY WHEELS

We make Cast Iron Fly Wheels of all diameters and any rim section.

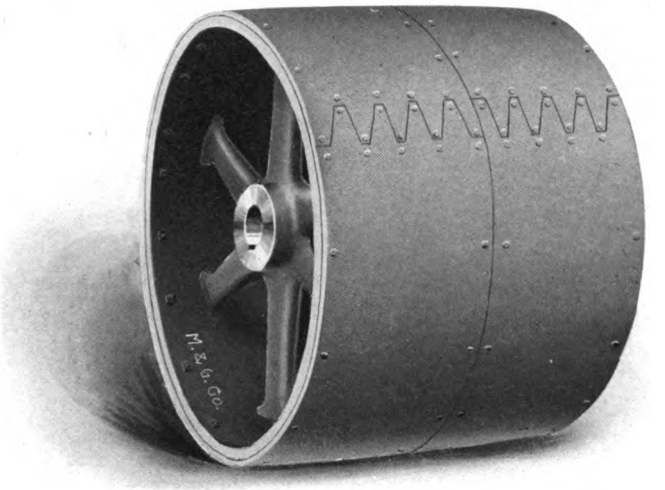
These wheels are made either Whole, Split, or with Split or Clamp Hubs—and also in any number of sections.

In sending for prices, state Diameter, Face, Thickness of Rim, Bore, size of keyway and whether the wheel is to be Whole, Split, Clamp Hub, or in Sections and state the speed the wheel is intended to run.

(Send sketch if possible.)

M & G CAST IRON FLY WHEEL

RUBBER OR CANVAS BELT COVERING FOR CAST IRON HEAD AND CONVEYOR PULLEYS



Rubber or Canvas Belt Covering riveted to head pulleys greatly increases the traction and prevents slippage.

Prices below are additional prices to be ADDED to pulley prices when covered pulleys are wanted. Four ply rubber or canvas or single leather belting is used in covering.

PRICE LIST (Subject to Discount)

Dia. in.	Face in.	List Price	Dia. in.	Face in.	List Price	Dia. in.	Face in.	List Price	Dia. in.	Face in.	List Price	Dia. in.	Face in.	List Price
	16	$14.00		32	$27.60		20	$22.55		36	$44.05		24	$34.35
	18	15.00		34	29.15		22	24.40	26	38	46.75		26	37.15
	20	16.00	16	36	30.75		24	26.30		40	49.60		28	40.20
	22	17.15		38	32.50		26	28.30					30	43.15
	24	18.35		40	34.25		28	30.30		16	21.85	32	32	46.35
	26	19.70				22	30	32.30		18	23.85		34	49.50
12	28	21.00		16	16.75		32	34.35		20	26.05		36	52.80
	30	22.35		18	18.25		34	36.40		22	28.30		38	56.05
	32	23.80		20	19.90		36	38.45		24	30.65		40	59.45
	34	25.25		22	21.55		38	40.60		26	33.10			
	36	26.75		24	23.20		40	42.85	28	28	35.75		16	25.50
	38	28.25		26	24.80					30	38.35		18	28.10
	40	29.85	18	28	26.45		16	19.80		32	41.10		20	30.75
				30	28.10		18	21.60		34	43.85		22	33.40
	16	14.80		32	29.75		20	23.55		36	46.75		24	36.30
	18	16.00		34	31.50		22	25.55		38	49.75		26	39.30
	20	17.25		36	33.35		24	27.60		40	52.90	34	28	42.40
	22	18.45		38	35.10		26	29.70					30	45.50
	24	19.90		40	37.00	24	28	31.85		16	22.95		32	48.80
	26	21.25					30	34.15		18	25.20		34	52.15
14	28	22.70		16	17.95		32	36.50		20	27.55		36	55.35
	30	24.00		18	19.70		34	38.85		22	30.05		38	58.95
	32	25.45		20	21.35		36	41.20		24	32.60		40	62.75
	34	27.00		22	23.10		38	43.65		26	35.25			
	36	28.40		24	24.70		40	46.35	30	28	37.90		16	26.95
	38	30.00		26	26.50					30	40.80		18	29.60
	40	31.60	20	28	28.20		16	20.80		32	43.75		20	32.40
				30	30.00		18	22.75		34	46.75		22	35.25
	16	15.80		32	31.70		20	24.80		36	49.80		24	38.25
	18	17.25		34	33.50		22	26.90		38	52.90	36	26	41.40
	20	18.70		36	35.50	26	24	29.10		40	56.15		28	44.70
16	22	20.25		38	37.50		26	31.45					30	47.95
	24	21.75		40	39.55		28	33.80		16	24.20		32	51.35
	26	23.20					30	36.30	32	18	26.50		34	54.85
	28	24.60	22	16	18.95		32	38.85		20	29.00		36	58.40
	30	26.10		18	20.70		34	41.40		22	31.55		38	62.10
													40	66.00

We are also prepared to cover all sizes of pulleys with leather without drilling holes in the pulley or using rivets.

We can put it on the pulleys at your place without taking them from the shafting. It is no experiment and can be put on either iron or wood pulleys. Prices on application.

KEYSEATING OR SET-SCREWING PULLEYS

Where Keyway or Set Screws are not included in price of pulleys, we charge as per list below. (Subject to discount.)

Pulley Face Inches	Bore Diameter in Inches							
	1 to 2	2 1/16 to 2 1/2	2 5/16 to 3	3 1/16 to 3 1/2	3 5/16 to 4	4 1/16 to 4 1/2	4 5/16 to 5	5 1/16 to 6
3 to 6	$ .50	$ .60	$ .75	$ .85	$1.00	$1.30	$1.50	$2.00
7 to 9	.60	.70	.85	.95	1.20	1.65	1.95	2.55
10 to 12	.70	.80	1.20	1.30	1.50	2.00	2.35	3.05
13 to 16	.....	1.00	1.70	1.80	2.00	2.50	3.00	3.80
17 to 20	.....	1.20	2.35	2.45	2.70	3.00	3.70	4.60
21 to 24	.....	.....	3.00	3.10	3.35	3.50	4.35	5.35
25 to 30	.....	.....	3.70	3.80	4.00	4.20	5.00	6.25
31 to 36	.....	.....	4.15	4.25	4.75	5.00	5.85	7.35

Straight Keyway (Featherway) with setscrews over always furnished unless *taper keyway* is specified.

If Pulleys are wanted FITTED to shaft, we make an extra charge for the work as per table below. (Does not include Keyseating Shaft, Pulley or furnishing Key.) (Subject to discount.)

Pulley Face Inches	Shaft Diameter in Inches							
	1 to 2	2 1/16 to 2 1/2	2 5/16 to 3	3 1/16 to 3 1/2	3 5/16 to 4	4 1/16 to 4 1/2	4 5/16 to 5	5 1/16 to 6
3 to 6	$1.75	$1.75	$1.85	$1.95	$2.00	$2.35	$3.00	$3.75
7 to 9	1.75	1.85	2.00	2.10	2.20	2.70	3.35	4.10
10 to 12	1.75	2.00	2.20	2.30	2.40	3.00	3.85	4.55
13 to 16	.....	2.25	2.40	2.50	2.70	3.35	4.35	5.35
17 to 20	.....	2.40	2.70	2.90	3.15	4.20	5.00	6.00
21 to 24	.....	.....	3.00	3.20	3.85	5.00	5.85	7.10
25 to 30	.....	.....	3.50	3.70	4.50	5.85	6.70	8.00
31 to 36	.....	.....	4.00	4.25	5.00	6.70	7.50	9.00

TIGHT AND LOOSE, AND FLUSH HUB PULLEYS

Prices below are to be added per pair to list prices of M & G Steel Rim Whole Pulleys or Cast Iron Pulleys when Tight and Loose Pulleys are wanted, or one-half the price given for a pulley with extra long or flush hub. Oil or grease cups extra, see page 145.

Pulley Face Inches	Diameter in Inches					
	6 to 9	10 to 15	16 to 20	21 to 30	31 to 42	43 to 60
3 and 4	$1.00	$1.20	$1.80	$3.00	$4.10	$5.20
5 and 6	2.00	2.30	2.90	4.10	5.50	7.40
7 and 8	3.00	3.40	4.00	5.20	6.90	9.30
9 and 10	4.50	5.00	5.50	6.80	9.00	12.00
11 and 12	.....	7.00	7.50	9.10	12.10	15.80
13 and 14	.....	.....	.....	12.50	16.50	21.00
15 and 16	.....	.....	.....	.....	23.00	29.00

Note—Loose pulleys can be fitted with Babbitted or Bronze bushed hubs, as listed on page 67, or the Ring-oiling bushing described on page 68 may be used for high speed pulleys.

FACING ENDS OF PULLEY HUBS

The following prices are to be added to list price of pulley when hubs are ordered faced. (Subject to same discount as pulley)

Bore of Pulley	List Price (per end)	Bore of Pulley	List Price (per end)	Bore of Pulley	List Price (per end)
Up to 1 11/16 in.	$.50	3 to 3 11/16 in.	$1.00	5 to 6 in.	$2.00
2 to 2 11/16 in.	.75	4 to 4 11/16 in.	1.50	6 to 8 in.	2.50

EXTRA LARGE BORES IN PULLEYS

Table of Maximum Bores allowable in Cast Iron Pulleys and in **M & G** Steel Rim *Whole* Pulleys and also for **M & G** Steel Rim Split Pulleys *without bushings* as listed on pages 21 and 22, at regular prices and schedule of percentages to be added to pulley prices for bores larger than allowable size.

Pulley diameter inches	3 to 5	6 to 9	10 to 15	16 to 20	21 to 30	31 to 42	43 to 48	50 to 60	62 to 70	72 to 80	82 to 90	92 to 120	
Max. bore allowed at regular price →	1½	1 15/16	2 7/16	2 15/16	3 7/16	3 15/16	4 7/16	4 15/16	5 7/16	5 15/16	6½	7	
Excess Bore Desired 1¾	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1 15/16	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2 3/16	30	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2 7/16	40	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2 11/16	50	30	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2 15/16	60	40	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3 3/16	65	45	25	5	.....	.....	.....	.....	.....	.....	.....	.....	.....
3 7/16	70	50	30	10	.....	.....	.....	.....	.....	.....	.....	.....	.....
3 11/16	.....	55	35	15	5	.....	.....	.....	.....	.....	.....	.....	.....
3 15/16	.....	60	40	20	10	.....	.....	.....	.....	.....	.....	.....	.....
4 3/16	.....	62½	42½	22½	12½	2½	.....	.....	.....	.....	.....	.....	.....
4 7/16	.....	65	45	25	15	5	.....	.....	.....	.....	.....	.....	.....
4 11/16	.....	.....	47½	27½	17½	7½	2½	.....	.....	.....	.....	.....	.....
4 15/16	.....	.....	50	30	20	10	5	.....	.....	.....	.....	.....	.....
5 3/16	.....	.....	.....	32½	22½	12½	7½	2½	.....	.....	.....	.....	.....
5 7/16	.....	.....	.....	35	25	15	10	5	.....	.....	.....	.....	.....
5 11/16	.....	.....	.....	36½	26½	16½	11½	6½	1½	.....	.....	.....	.....
5 15/16	.....	.....	.....	.....	28	18	13	8	3	.....	.....	.....	.....
6½	.....	.....	.....	.....	.....	20½	15½	10½	5½	2½	.....	.....	.....
7	.....	.....	.....	.....	.....	.....	17½	12½	7½	4½	2	.....	.....
7½	.....	.....	.....	.....	.....	.....	19	14	9	6	3½	1½	.....
8	.....	.....	.....	.....	.....	.....	20½	15½	10½	7½	5	3	.....
8½	.....	.....	.....	.....	.....	.....	22	17	12	9	6½	4½	.....
9	.....	.....	.....	.....	.....	.....	.....	18½	13½	10½	8	6	.....

Figures in the table under the max. bore allowed and opposite the excess bore desired show the percentage to be added to the price of pulley when wanted with such extra large bore.

PRESSED STEEL SPLIT PULLEYS "AMERICAN"

American Pulleys are made entirely of wrought steel. They are "split" pulleys for *double belt service* and are used with interchangeable bushings. No keyways or set screws are required unless in special cases, when keys can be used.

They weigh about half as much as cast iron pulleys, and being split can be applied without stripping the shaft.

They grip the shaft to perfection and can be bushed down to any size of shaft.

Design used Sizes 6" to 24" (Patented)
(In Narrow Faces only above 16")

Design used sizes 16" to 24" (Patented)
(Wide Faces)
Same Design all Faces 25" to 42" except that wide faces have two or more rows of arms.

(Patented)
Design used in Sizes 44" to 60" Diameter

Design used in Sizes 3" to 5" Diameter, inclusive

Metal Bushings to Fit any Shaft

For Price List of American Steel Split Pulleys see pages 60 to 62.

TO FIND HORSE POWER WHICH AN "AMERICAN" PULLEY WILL SAFELY TRANSMIT

(Formula given by the manufacturers.)

Multiply the circumference of the pulley *in feet* (C), by the number of revolutions per minute (R), by the width of the pulley face *in inches* (W), by 125, and divide by 33,000. Thus:

$$\text{Horse Power} = \frac{C \times R \times W \times 125}{33{,}000}$$

The figures given for the horse power which pulleys will transmit are much too high to be a safe guide in the case of *belting*. To find what a double belt will transmit make the formula

$$\text{Horse Power} = \frac{C \times R \times W \times 75}{33{,}000}$$

PRESSED STEEL SPLIT PULLEYS (*Continued*)
"AMERICAN"

TABLE OF HUBS AND BORES

The table below shows the maximum bores and lengths of hubs furnished with different sizes of American Steel Split Pulleys.

Any bore smaller than the one listed may be obtained by means of the interchangeable bushings.

Special and larger bores than given in table may be had upon special factory order. Let us know your requirements.

ALL DIMENSIONS GIVEN IN INCHES

Pulley Diameters	Faces Inclusive	Bores and Hubs furnished Bores	HubLength
3	2 to 4	1 3/16	2 1/4
4 to 5	2 to 5	1 15/16	2 1/2
6 to 7	2 to 6	2 7/16	3 1/2
8 to 9	2	2 7/16	3 1/2
" " "	3	2 7/16 or 2 15/16	3 1/2 or 4 1/2
" " "	4 to 10	2 15/16	4 1/2
10 to 11	2	2 7/16	3 1/2
" " "	3	2 7/16 or 2 15/16 or 3 7/16	3 1/2 or 4 1/2
" " "	4	2 15/16 or 3 7/16	4 1/2
" " "	5 to 8	2 15/16 or 3 7/16	5 1/2
" " "	10 to 12	3 7/16	5 1/2
12 to 15	2	2 7/16	3 1/2
" " "	3	2 7/16 or 2 15/16 or 3 7/16	3 1/2 or 4 1/2
" " "	4	2 15/16 or 3 7/16	4 1/2
" " "	5 to 8	2 15/16 or 3 7/16	5 1/2
" " "	10 to 12	3 7/16	5 1/2
" " "	14 to 16	3 7/16	11 1/2*
16	2	2 7/16	3 1/2
"	3	2 7/16 or 2 15/16 or 3 7/16	3 1/2 or 4 1/2
"	4	2 15/16 or 3 7/16	4 1/2
"	5 to 6	2 15/16 or 3 7/16	5 1/2
"	8 to 12	3 7/16	5 1/2
"	14 to 16	3 7/16	11 1/2*
17 to 19	3 to 4	2 15/16 or 3 7/16	4 1/2
" " "	5 to 6	2 15/16 or 3 7/16	5 1/2
" " "	8 to 12	3 7/16	5 1/2
" " "	14 to 16	3 7/16	11 1/2*
20 to 23	3 to 4	2 15/16 or 3 7/16	4 1/2
" " "	5 to 6	2 15/16 or 3 7/16	5 1/2
" " "	8 to 12	3 7/16	5 1/2

Pulley Diameters (*Continued*)	Faces Inclusive	Bores and Hubs furnished Bores	HubLength
20 to 23	14 to 18	3 7/16	11 1/2*
24	3 to 4	2 15/16 or 3 7/16	4 1/2
"	5 to 6	2 15/16 or 3 7/16	5 1/2
"	8 to 12	3 7/16	5 1/2
"	14 to 18	3 7/16	11 1/2*
"	20	3 7/16	13 1/2*
25 to 28	4 to 8	3 7/16	5 1/2
" " "	10 to 16	4 7/16	6 1/2
" " "	18 to 20	4 7/16	16 1/2*
30	4 to 8	3 7/16	5 1/2
"	10 to 16	4 7/16	6 1/2
"	18 to 26	4 7/16	16 1/2*
"	28	4 7/16	18 1/2*
"	30	4 7/16	26 1/2*
32 to 34	4 to 16	4 7/16	6 1/2
" " "	18 to 26	4 7/16	16 1/2*
" " "	28	4 7/16	18 1/2*
" " "	30 to 32	4 7/16	26 1/2*
36 to 42	4 to 16	4 7/16	6 1/2
" " "	18 to 26	4 7/16	16 1/2*
" " "	28	4 7/16	18 1/2*
" " "	30 to 36	4 7/16	26 1/2*
44 to 60	6 to 16	4 7/16	8 1/2
" " "	18 to 26	4 7/16	18 1/2*
" " "	28	4 7/16	20 1/2*
" " "	30 to 36	4 7/16	28 1/2*
62 to 72	6 to 16	6 or 8 1/2	10 1/2
" " "	18 to 26	" " "	20 1/2*
" " "	28	" " "	22 1/2*
" " "	30 to 36	" " "	30 1/2*
74 to 88	8 to 16	" " "	10 1/2
" " "	18 to 26	" " "	20 1/2*
" " "	28	" " "	22 1/2*
" " "	30 to 36	" " "	30 1/2*
90 to 120	10 to 16	" " "	10 1/2
" " "	18 to 26	" " "	20 1/2*
" " "	28	" " "	22 1/2*
" " "	30 to 36	" " "	30 1/2*

*These are double and triple arm pulleys and length of hub is measured from outside to outside of the several hubs.

For Price List of American Pulleys see next page.

PRESSED STEEL SPLIT PULLEYS (*Continued*)

PRICE LIST (Subject to Discount)

Dia. in.	FACE IN INCHES										
	2	3	4	5	6	8	10	12	14	16	18
3	$2.28	$2.40	$2.52	.....	.....	.....	.....	.....	.....	.....	.....
4	2.40	2.52	2.64	$2.75	.....	.....	.....	.....	.....	.....	.....
5	2.52	2.64	2.75	2.87	.....	.....	.....	.....	.....	.....	.....
6	3.15	3.30	3.45	3.75	$4.05	.....	.....	.....	.....	.....	.....
7	3.22	3.38	3.60	3.90	4.20	.....	.....	.....	.....	.....	.....
8	3.30	3.45	3.75	4.05	4.35	$4.95	$5.60	.....	.....	.....	.....
9	3.38	3.60	3.90	4.20	4.50	5.10	5.75	.....	.....	.....	.....
10	3.45	3.75	4.05	4.35	4.65	5.25	5.90	$6.45	.....	.....	.....
11	3.65	3.90	4.20	4.50	4.80	5.40	6.00	6.90	.....	.....	.....
12	3.90	4.20	4.63	4.80	5.33	5.78	6.45	7.65	$9.00	$10.25	.....
13	4.05	4.35	4.80	5.20	5.62	6.43	7.20	8.40	9.50	10.75	.....
14	4.20	4.50	5.20	5.65	6.15	7.05	8.03	9.00	10.00	11.25	.....
15	4.35	4.65	5.45	5.80	6.55	7.65	8.80	9.75	10.75	12.00	.....
16	4.50	4.95	5.75	6.10	6.90	8.25	9.45	10.50	11.50	12.65	.....
17	.....	5.25	6.00	6.50	7.28	8.78	10.05	11.25	12.40	13.65	.....
18	.....	5.55	6.38	7.00	7.65	9.30	10.65	12.00	13.25	14.50	.....
19	.....	5.80	6.75	7.50	8.25	10.13	11.25	12.90	14.20	15.60	.....
20	.....	6.00	7.50	8.10	9.00	10.73	12.00	14.25	15.30	16.90	$18.59
21	.....	6.25	8.00	8.90	9.60	11.25	12.98	15.60	18.00	20.55	22.60
22	.....	6.50	8.55	9.50	10.28	12.00	14.10	16.80	19.50	21.30	23.43
23	.....	7.00	8.70	9.90	10.58	12.60	14.75	18.00	21.00	24.30	26.73
24	.....	7.50	8.90	10.00	10.95	13.20	15.68	19.05	22.65	26.25	29.92
25	.....	.....	9.20	.....	11.45	13.80	16.40	20.20	24.50	29.25	35.05
26	.....	.....	9.55	.....	11.95	14.40	17.10	21.30	26.25	31.20	36.15
28	.....	.....	10.80	.....	12.90	15.45	18.15	22.90	28.50	34.50	40.35
30	.....	.....	12.00	.....	14.10	17.25	19.90	24.75	31.50	38.10	45.00
32	.....	.....	13.20	.....	15.45	19.35	22.50	26.86	34.15	41.65	48.37
34	.....	.....	14.40	.....	17.25	21.75	25.50	30.00	36.75	45.00	51.75
36	.....	.....	15.90	.....	19.50	24.00	28.65	33.75	39.75	48.60	55.50
38	.....	.....	19.50	.....	21.75	26.40	31.05	37.15	42.75	51.75	58.87
40	.....	.....	21.00	.....	24.00	28.50	33.75	40.15	46.50	55.15	62.25
42	.....	.....	23.25	.....	26.25	32.25	37.50	43.50	50.25	57.75	65.62
44	.....	.....	.....	.....	29.25	35.62	41.25	47.25	54.00	61.12	69.00
46	.....	.....	.....	.....	33.00	39.00	45.00	50.25	57.75	64.50	72.00
48	.....	.....	.....	.....	36.75	42.00	48.75	54.00	61.50	67.50	75.00
50	.....	.....	.....	.....	40.87	47.25	53.25	58.50	66.00	75.00	84.00
52	.....	.....	.....	.....	46.50	51.00	57.00	63.00	69.00	78.75	90.00
54	.....	.....	.....	.....	50.25	56.25	61.50	67.50	74.25	83.25	96.75
56	.....	.....	.....	.....	54.00	60.75	66.75	72.75	80.25	90.00	104.25
58	.....	.....	.....	.....	60.00	65.25	71.25	78.37	86.62	96.37	110.62
60	.....	.....	.....	.....	63.75	70.50	77.25	84.00	93.00	102.75	117.00
62	.....	.....	.....	.....	64.40	72.85	84.30	95.95	107.55	119.95	132.30
64	.....	.....	.....	.....	65.05	76.50	88.20	100.10	111.95	124.60	137.20
66	.....	.....	.....	.....	68.55	80.25	92.20	104.35	116.45	129.35	142.20
68	.....	.....	.....	.....	72.20	84.15	96.35	108.75	121.10	134.25	147.40
70	.....	.....	.....	.....	75.80	88.10	100.70	113.55	126.35	139.95	153.60
72	.....	.....	.....	.....	79.50	92.15	105.05	118.15	131.30	145.40	159.65

For larger diameters see page 62.

PRESSED STEEL SPLIT PULLEYS (*Continued*)

HOW TO ORDER PRESSED STEEL PULLEYS

Always specify *diameter*, *face*, *bore*, and whether *Crown* or *Straight* face.

If pulleys are ordered without either *Crown* or *Straight* face being specified, they will be supplied *Crown*.

For non-shifting belts Crown faces are the best.

For tight and loose pulleys Crown faces are the best.

When a belt is to be shifted on the face of one pulley, running first on one side of the center and then on the other, specify a Straight face.

Pressed steel pulleys can be bushed down to any size of shaft.

For extra heavy work pressed steel pulleys may be keyseated at the following prices.

NET EXTRA CHARGES FOR KEYSEATING

For keyseating 3″, 4″ and 5″ pulleys, add 30c each.

For keyseating standard pulleys 6″ diameter to 24″ diameter inclusive, with faces to 12″ wide inclusive, add 75c each; for standard pulleys 6″ diameter to 24″ diameter inclusive with faces wider than 12″, add $1.50 each.

For keyseating standard pulleys above 24″ diameter with faces to 16″ wide inclusive, add 75c each; for standard pulleys above 24″ diameter with faces wider than 16″ to 28″ wide inclusive, add $1.50 each; for standard pulleys above 24″ diameter with faces wider than 28″ add $2.25 each.

For larger bores not listed, prices on application.

See table of standard hubs and bores on page 59.

WIDER FACES—PRICE LIST

(Subject to Discount)

Diameter inches	FACE IN INCHES								
	20	22	24	26	28	30	32	34	36
24	$34.50	.....	.....	.....	.....	.....	.....	.....	.....
25	39.50	.....	.....	.....	.....	.....	.....	.....	.....
26	41.40	.....	.....	.....	.....	.....	.....	.....	.....
28	46.35	.....	.....	.....	.....	.....	.....	.....	.....
30	49.50	$55.50	$61.50	$67.50	$74.25	$81.67	.....	.....	.....
32	54.37	60.37	66.37	72.37	79.60	87.56	$96.31	.....	.....
34	57.45	63.75	69.75	75.00	82.50	90.75	99.82	.....	.....
36	61.50	67.50	73.50	79.50	87.45	96.19	105.80	$116.38	$128.01
38	64.87	70.87	76.87	82.87	91.15	100.26	110.28	121.30	133.43
40	69.75	77.25	84.75	92.55	101.80	111.98	123.17	135.48	149.02
42	73.12	80.62	88.12	95.62	105.18	115.69	127.25	139.97	153.96
44	78.00	87.00	96.00	105.00	115.50	127.05	139.75	153.72	169.09
46	81.00	90.00	99.00	108.00	118.80	130.68	143.74	158.11	173.92
48	87.00	99.00	111.00	123.00	135.30	148.83	163.71	180.08	198.08
50	96.00	108.00	120.00	132.00	145.20	159.72	175.69	193.25	212.57
52	102.00	114.00	126.00	138.00	151.80	166.98	183.67	202.03	222.23
54	108.75	120.75	132.75	144.75	159.22	175.14	192.65	211.91	233.10
56	119.25	134.25	149.25	164.25	180.67	198.73	218.60	240.46	264.50
58	125.62	140.62	155.62	170.62	187.68	206.44	227.08	249.78	274.75
60	132.00	147.00	162.00	177.00	194.70	214.17	235.58	259.13	285.04
62	144.85	185.80	201.65	214.70	227.80	241.10	254.50	268.05	288.70
64	150.00	197.10	210.20	223.50	236.85	250.40	264.05	273.85	291.75
66	155.30	205.55	218.95	232.50	246.15	259.95	273.85	287.95	302.20
68	160.80	214.30	227.95	241.70	255.70	269.85	284.10	298.50	313.05
70	167.60	223.70	237.85	252.20	266.60	281.20	295.95	310.90	326.00
72	174.30	232.90	247.35	262.00	276.80	291.90	307.20	322.75	338.50

Pulleys larger than 72 inches listed on next page.

PRESSED STEEL SPLIT PULLEYS (*Continued*)

For smaller diameter pulleys see preceding pages.

PRICE LIST (Subject to Discount)

Diameter Inches	FACE IN INCHES							
	8	10	12	14	16	18	20	22
74	$96.35	$109.65	$123.20	$136.85	$151.50	$166.30	$181.50	$197.25
76	100.65	114.30	128.35	142.55	157.75	173.10	188.95	205.25
78	105.05	119.15	133.70	148.45	164.20	180.20	196.60	213.45
80	109.60	124.25	139.35	154.65	170.95	187.45	204.40	221.80
82	114.25	129.45	145.10	160.95	177.90	195.05	212.65	230.80
84	119.00	134.75	150.95	167.40	184.95	202.75	221.05	239.90
86	123.90	140.25	157.10	174.20	192.40	210.85	229.80	249.25
88	128.90	145.85	163.35	181.05	199.90	218.95	238.55	258.65
90	.....	151.70	169.85	188.20	207.65	227.30	247.45	268.30
92	.....	157.75	176.55	195.70	215.85	236.10	256.85	278.15
94	.....	163.85	183.45	203.20	223.95	244.95	266.35	288.20
96	.....	170.15	190.55	210.95	232.35	253.90	275.85	298.25
98	.....	176.60	197.85	219.10	241.20	263.25	285.65	308.50
100	.....	181.50	203.20	224.90	247.45	269.90	292.65	315.80
102	.....	186.40	208.45	230.50	253.40	276.35	299.50	322.90
104	.....	191.35	213.85	236.30	259.55	282.75	306.20	329.95
106	.....	196.95	220.00	243.05	266.95	290.90	315.10	339.50
108	.....	203.40	226.90	250.45	274.90	299.40	324.70	349.40
110	.....	210.00	234.00	258.05	283.05	308.15	333.53	359.35
112	.....	216.85	241.45	266.15	291.75	317.35	343.30	369.60
114	.....	.....	248.90	274.15	300.30	326.45	352.95	379.80
116	.....	.....	256.50	282.30	309.00	335.80	362.90	390.30
118	.....	.....	264.20	290.50	317.65	344.95	372.65	400.70
120	.....	.....	271.95	298.70	326.40	354.25	382.50	411.20

WIDER FACES (*Continued*)

Diameter Inches	FACE IN INCHES						
	24	26	28	30	32	34	36
74	$257.70	$272.90	$288.30	$303.95	$319.80	$335.90	$352.30
76	268.35	284.10	300.10	316.35	332.85	349.65	366.70
78	279.40	295.75	312.35	329.25	346.40	363.80	381.45
80	291.05	307.00	325.20	342.65	360.35	378.35	396.60
82	302.90	320.50	338.30	356.50	374.90	393.60	412.55
84	315.00	333.15	351.70	370.55	389.65	409.05	428.70
86	327.70	346.55	365.80	385.35	405.15	425.25	445.60
88	340.60	360.20	380.00	400.15	420.60	441.40	462.50
90	354.05	374.35	394.90	415.75	436.85	458.25	479.95
92	368.00	389.45	410.50	432.10	453.95	476.10	498.50
94	382.15	404.00	426.05	448.40	471.00	493.85	517.00
96	396.90	419.45	442.20	465.15	488.35	511.90	535.70
98	410.75	435.45	459.15	483.00	506.85	530.95	555.25
100	424.60	446.90	470.95	495.15	519.45	544.00	568.75
102	438.40	457.75	482.30	507.00	531.80	556.80	582.00
104	452.25	469.10	494.05	519.15	544.35	569.75	595.25
106	466.10	482.20	507.85	533.70	559.60	585.80	612.10
108	479.95	496.95	523.10	549.55	576.05	602.85	629.75
110	493.80	512.00	538.75	565.75	592.90	620.30	637.90
112	507.60	528.00	555.45	583.10	610.95	640.65	668.80
114	521.45	543.90	572.00	600.20	628.65	657.25	685.95
116	535.30	560.10	588.75	617.60	646.60	675.95	705.35
118	549.15	576.50	605.65	634.95	664.50	694.30	724.30
120	563.00	592.90	622.00	652.45	682.60	713.00	743 60

PRESSED STEEL SPLIT PULLEYS (*Continued*)

APPROXIMATE WEIGHTS OF AMERICAN PULLEYS IN LBS.

Dia.	Bore	FACES																
		2″	3″	4″	5″	6″	8″	10″	12″	14″	16″	18″	20″	22″	24″	26″	28″	30″
3″	....	1.2	1.5	1.6	....	....	....	....	....	....	....	....	....	....	....	....	....	....
4	....	1.9	2.4	2.6	2.9	....	....	....	....	....	....	....	....	....	....	....	....	....
5	....	2.4	3	3.3	3.6	....	....	....	....	....	....	....	....	....	....	....	....	....
6	....	6	7	7	8	8	....	....	....	....	....	....	....	....	....	....	....	....
7	....	7	7	8	9	10	....	....	....	....	....	....	....	....	....	....	....	....
8	....	9	11	12	14	15	16	21	....	....	....	....	....	....	....	....	....	....
9	....	11	12	13	14	16	17	22	....	....	....	....	....	....	....	....	....	....
10	....	12	14	17	20	21	23	31	37	....	....	....	....	....	....	....	....	....
11	....	12	17	18	20	21	23	34	39	....	....	....	....	....	....	....	....	....
12	....	14	18	19	22	24	26	37	40	50	52	....	....	....	....	....	....	....
13	....	15	18	19	24	25	27	40	41	52	54	....	....	....	....	....	....	....
14	....	15	19	20	24	26	28	41	44	54	56	....	....	....	....	....	....	....
15	....	16	20	22	26	27	29	43	46	56	58	....	....	....	....	....	....	....
16	....	18	21	23	27	28	32	45	47	60	64	....	....	....	....	....	....	....
17	....	....	21	24	28	28	33	47	49	61	66	....	....	....	....	....	....	....
18	....	....	23	25	29	30	35	50	52	65	70	....	....	....	....	....	....	....
19	....	....	25	25	30	32	37	51	55	69	74	....	....	....	....	....	....	....
20	....	....	25	26	31	33	38	52	56	67	91	100	....	....	....	....	....	....
21	....	....	25	26	31	35	39	54	59	71	94	103	....	....	....	....	....	....
22	....	....	26	28	32	36	41	57	60	75	99	107	....	....	....	....	....	....
23	....	....	31	32	38	39	45	59	64	82	102	111	....	....	....	....	....	....
24	....	....	32	34	38	41	48	61	65	89	107	114	118	....	....	....	....	....
25	3⅞″	....	....	47	....	53	65	....	....	....	....	132	....	....	....	....	....	....
	4⅞	....	....	75	....	82	92	104	110	124	131	185	201	....	....	....	....	....
26	3⅞	....	....	48	....	55	67	....	....	....	....	136	....	....	....	....	....	....
	4⅞	....	....	77	....	85	96	108	114	129	136	194	212	....	....	....	....	....
28	3⅞	....	....	50	....	58	71	....	....	....	....	143	....	....	....	....	....	....
	4⅞	....	....	80	....	89	103	114	120	137	144	207	224	....	....	....	....	....
30	3⅞	....	....	52	....	60	74	....	....	....	....	150	....	....	....	....	....	....
	4⅞	....	....	85	....	92	108	119	126	144	153	218	234	241	245	274	257	353

Dia.	Bore	FACES																
		4″	6″	8″	10″	12″	14″	16″	18″	20″	22″	24″	26″	28″	30″	32″	34″	36″
32	4⅞″	92	102	112	125	143	152	160	226	244	253	279	292	296	367	374	....	....
34	4⅞	96	106	117	130	150	159	168	237	254	264	290	306	309	384	391	....	..
36	4⅞	100	110	121	136	156	166	175	246	266	276	303	319	322	398	406	428	438
38	4⅞	104	115	126	142	163	173	183	255	278	288	318	332	338	415	423	447	457
40	4⅞	108	119	131	147	170	181	191	265	289	299	333	345	355	432	440	465	476

Table of weights continued on next page.

PRESSED STEEL SPLIT PULLEYS (*Continued*)

APPROXIMATE WEIGHTS OF AMERICAN PULLEYS IN LBS.

(Smaller diameters given on preceding page)

Dia.	Bore	FACES																
		4″	6″	8″	10″	12″	14″	16″	18″	20″	22″	24″	26″	28″	30″	32″	34″	36″
42	4⅞	112	123	136	153	176	188	199	277	299	311	343	359	366	449	458	481	495
44	4⅞	....	180	190	236	270	285	295	380	461	472	528	546	551	704	727	740	753
46	4⅞	....	183	193	240	275	290	300	386	469	480	538	554	562	721	746	760	773
48	4⅞	....	188	198	245	280	295	305	396	478	490	544	558	573	736	762	780	790
50	4⅞	....	220	230	260	289	304	317	454	486	515	547	564	585	753	780	795	810
	6	....	269	281	309	338	353	368	554	584	612	639	655	681	872	900	915	930
52	4⅞	....	226	237	267	297	312	327	467	497	539	559	574	602	771	800	815	831
	6	....	275	286	317	347	362	378	568	598	627	657	672	700	894	923	938	954
54	4⅞	....	232	244	275	306	321	337	482	514	545	576	590	621	796	826	842	858
	6	....	283	294	326	357	373	389	581	613	643	674	689	719	919	949	965	981
56	4⅞	....	237	251	282	316	331	348	495	527	560	592	607	639	818	849	865	882
	6	....	289	301	335	365	383	399	595	628	658	690	707	738	940	972	988	1005
58	4⅞	....	244	257	291	322	340	358	509	541	575	609	625	656	839	872	889	906
	6	....	295	308	342	375	393	409	607	643	674	708	725	757	962	995	1012	1029
60	4⅞	....	250	263	298	333	349	368	520	555	590	623	641	673	861	894	912	930
	6	....	302	315	351	384	402	420	621	658	691	725	742	775	984	1017	1035	1055
62	6	....	348	362	395	429	449	469	720	753	769	803	821	855	1150	1184	1204	1224
	8½	....	379	393	426	460	480	500	782	815	831	865	883	917	1243	1277	1297	1317
64	6	....	356	370	404	439	460	480	735	769	782	822	847	876	1167	1203	1224	1244
	8½	....	387	401	435	470	491	511	787	831	844	884	909	938	1260	1296	1318	1338

Dia.	Bore	FACES															
		6″	8″	10″	12″	14″	16″	18″	20″	22″	24″	26″	28″	30″	32″	34″	36″
66	6	363	378	413	449	471	492	750	785	803	840	859	896	1195	1232	1254	1275
	8½	394	409	444	480	502	523	812	847	865	902	921	958	1288	1325	1347	1368
68	6	370	385	422	460	481	503	766	802	820	858	878	916	1218	1255	1277	1300
	8½	401	416	453	491	512	534	828	864	882	920	940	978	1311	1348	1370	1393
70	6	377	393	431	470	492	514	787	818	837	876	896	935	1243	1282	1305	1337
	8½	408	424	462	501	523	545	849	880	899	938	958	997	1336	1375	1398	1430
72	6	385	401	440	480	503	526	796	835	854	894	915	955	1268	1308	1332	1355
	8½	416	432	471	511	534	557	858	897	916	956	977	1017	1361	1401	1425	1448
74	6	....	409	448	490	513	537	813	852	872	913	926	967	1303	1329	1353	1377
	8½	....	440	479	521	544	568	875	918	934	975	988	1049	1396	1422	1446	1470
76	6	....	423	457	499	524	548	828	868	888	930	953	995	1332	1349	1374	1398
	8½	....	454	488	530	555	579	890	930	950	992	1015	1057	1425	1443	1467	1491
78	6	....	442	466	510	535	560	844	885	906	950	972	1016	1353	1372	1397	1422
	8½	....	473	497	541	556	591	906	947	968	1012	1034	1078	1446	1465	1490	1515
80	6	....	477	519	564	590	615	948	990	1011	1056	1079	1124	1462	1481	1507	1532
	8½	....	508	550	595	621	646	1010	1052	1073	1118	1141	1186	1555	1574	1600	1625

Table of weights continued on next page.

PRESSED STEEL SPLIT PULLEYS (*Continued*)

APPROXIMATE WEIGHTS OF AMERICAN PULLEYS IN LBS.

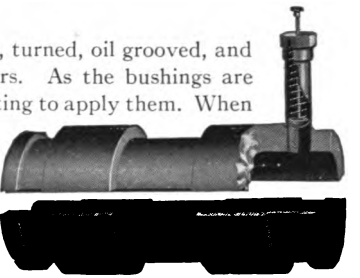
(Smaller diameters given on preceding page)

Dia.	Bore	Approximate Weights of American Pulleys 82 to 120 Inches in Diameter FACES															
		6″	8″	10″	12″	14″	16″	18″	20″	22″	24″	26″	28″	30″	32″	34″	36″
82	6	. . .	485	529	575	601	627	965	1009	1031	1076	1101	1146	1485	1503	1530	1556
	8½	....	516	561	606	632	658	1027	1071	1093	1138	1163	1208	1578	1596	1623	1649
84	6	....	531	578	621	651	671	1109	1152	1182	1222	1267	1302	1703	1741	1771	1813
	8½	....	582	631	672	702	720	1211	1254	1284	1334	1369	1404	1876	1914	1944	1986
86	6	...	542	593	632	663	682	1128	1169	1200	1250	1285	1320	1750	1785	1815	1855
	8½	....	593	644	683	714	733	1228	1271	1301	1352	1388	1423	1904	1940	1970	2010
88	6	....	555	610	648	680	695	1144	1179	1224	1279	1309	1348	1772	1805	1835	1880
	8½	....	601	656	694	725	746	1246	1285	1326	1381	1411	1450	1926	1959	1989	2034
90	6	....	....	615	650	690	711	1168	1198	1243	1288	1318	1362	1790	1820	1860	1895
	8½	....	....	662	697	732	758	1262	1292	1337	1392	1422	1456	1931	1961	2000	2030
92	6	....	....	628	664	695	716	1196	1226	1272	1318	1350	1379	1827	1857	1897	1932
	8½	....	....	675	711	736	763	1290	1320	1366	1412	1444	1473	1968	1998	2038	2073
94	6	....	....	640	667	698	720	1218	1248	1295	1342	1374	1414	1861	1891	1931	1966
	8½	....	....	687	716	740	768	1312	1342	1389	1436	1468	1508	2000	2032	2072	2107
96	6	....	....	650	688	713	742	1339	1369	1417	1466	1498	1539	1890	1920	1960	1995
	8½	....	....	697	735	760	789	1443	1463	1511	1561	1592	1633	2030	2060	2100	2135
98	6	....	....	788	817	843	872	1512	1542	1591	1640	1678	1746	2290	2329	2369	2405
	8½	....	....	835	864	890	919	1606	1646	1685	1734	1772	1840	2440	2470	2510	2546
100	6	....	....	801	841	868	897	1537	1569	1609	1659	1692	1775	2331	2361	2400	2435
	8½	....	....	848	888	915	944	1631	1663	1703	1753	1786	1865	2472	2502	2541	2576
102	6	....	....	812	847	872	909	1559	1592	1623	1673	1707	1796	2369	2399	2439	2474
	8½	....	....	856	895	919	956	1653	1646	1717	1751	1801	1890	2510	2540	2580	2615
104	6	....	....	825	866	896	926	1583	1617	1667	1717	1751	1822	2404	2434	2474	2509
	8½	....	....	872	913	943	973	1677	1711	1761	1811	1845	1906	2545	2575	2615	2649
106	6	....	....	840	883	913	943	1614	1648	1700	1754	1789	1837	2461	2484	2543	2580
	8½	....	....	891	932	963	992	1712	1746	1798	1852	1887	1935	2608	2642	2690	2730
108	6	....	....	853	895	925	956	1633	1669	1722	1777	1813	1861	2492	2528	2575	2618
	8½	....	....	901	943	973	1004	1729	1765	1818	1873	1909	1957	2636	2672	2720	2762
110	6	....	....	906	948	979	1011	1737	1774	1828	1884	1920	1970	2649	2686	2735	2778
	8½	....	....	946	988	1019	1051	1817	1854	1908	1964	2000	2050	2769	2806	2855	2898
112	6	....	....	918	962	993	1026	1762	1799	1854	1910	1948	1995	2685	2725	2790	2815
	8½	....	....	960	1004	1035	1068	1845	1880	1935	2015	2025	2072	2812	2850	2875	2900
114	6	....	....	....	970	1000	1037	1780	1815	1870	1931	1969	2020	2705	2742	2802	2834
	8½	....	....	....	1010	1050	1083	1872	1910	1964	2035	2056	2112	2851	2880	2905	2920
116	6	....	....	....	978	1010	1045	1796	1840	1896	1951	1989	2045	2740	2782	2840	2865
	8½	....	....	....	1018	1082	1127	1892	1929	1981	2043	2075	2132	2885	2905	2930	2940
118	6	....	....	....	990	1018	1056	1808	1851	1915	1965	2017	2068	2780	2820	2875	2895
	8½	....	....	....	1030	1094	1135	1904	1941	1993	2055	2087	2154	2915	2940	2965	2987
120	6	....	....	....	1010	1030	1067	1821	1862	1926	1976	2028	2080	2804	2855	2895	2930
	8½	....	....	....	1042	1106	1147	1915	1953	2015	2067	2098	2168	2950	2975	3000	3030

CAST IRON SPLIT LOOSE PULLEY BUSHINGS

FOR M & G STEEL RIM SPLIT PULLEYS OR AMERICAN SPLIT PULLEYS

WITH FAUL'S POSITIVE LUBRICATOR FOR LOOSE PULLEYS



These bushings are made of cast iron, bored, turned, oil grooved, and fitted with Faul's Cups and Candle Lubricators. As the bushings are split, it is unnecessary to dismantle a line of shafting to apply them. When desired, bushings can be had babbitted at an extra cost. Sample lubricator candles will be supplied with every bushing, and extra candles can be obtained at prices given below.

PRICE LIST (Subject to Discount)

Standard Outside Diameter of Bushing Corresponding to Bores of Pulleys	Inside Bores of Bushings	Length of Bushings	For Style and Face of Pulley given below — American: Pulley face	American: Separating Collar	M & G Steel Rim: Pulley face	M & G Steel Rim: Separating Collar	Price each
* 1 3/16"	1/2 to 1 1/16"	3 3/8"	2"	——	——	——	$1.50
		3 3/8"	3 to 4"	7/8" wide	——	——	1.75
1 1/16"	1 1/16 to 1 7/16"	3 3/8"	2"	——	——	——	1.75
* 4 to 5" Dia. Pulley		4 3/8"	3"	——	——	——	2.00
		4 3/8"	4 to 5"	7/8" wide	——	——	2.25
1 1/16"	1 1/16 to 1 7/16"	4 1/2"	3"	——	4"	7/8" wide	2.00
		"	——	——	5"	Standard	2.00
		5 1/2"	4"	——	6"	Standard	2.75
		5 1/8"	5 to 6"	Standard	——	——	3.00
2 7/16"	1 to 1 1/16"	4 1/16"	3"	——	4"	7/8" wide	2.45
		"	——	——	5"	Standard	2.45
		5 5/8"	4"	——	6"	Standard	2.75
		5 7/8"	5"	Standard	——	——	3.00
		6 7/16"	6"	Standard	——	——	4.00
2 1/16"	1 to 2 3/16"	5 3/4"	4"	——	1"	——	2.75
		"	——	——	5"	7/8" wide	2.75
		"	——	——	6"	1 1/2" "	2.75
		7 1/16"	5"	——	8"	Standard	3.25
		6 7/8"	6"	Standard	——	——	4.50
		8 1/2"	8"	Standard	——	——	5.30
3 7/16"	1 7/16 to 2 1/16"	5 3/4"	4"	——	——	——	3.20
		7 1/16"	5"	——	——	——	4.20
		6 7/8"	6"	Standard	6"	7/8" wide	5.20
		8 1/2"	8"	Standard	8"	1 1/16" wide	5.90
		"	——	——	10"	Standard	5.90
		10 1/4"	10 to 12"	Standard	——	——	7.35
4 7/16"	1 1/16 to 3 7/16"	8 1/4"	6"	——	——	——	6.00
		8 1/4"	8"	Standard	——	——	7.50
		11 1/4"	10 to 12"	Standard	——	——	8.50
		"	14 to 16"	Standard	——	——	8.50

*No lubricators supplied for these sizes, oil holes are provided in bushings.

PRICES OF EXTRA LUBRICATORS, NET

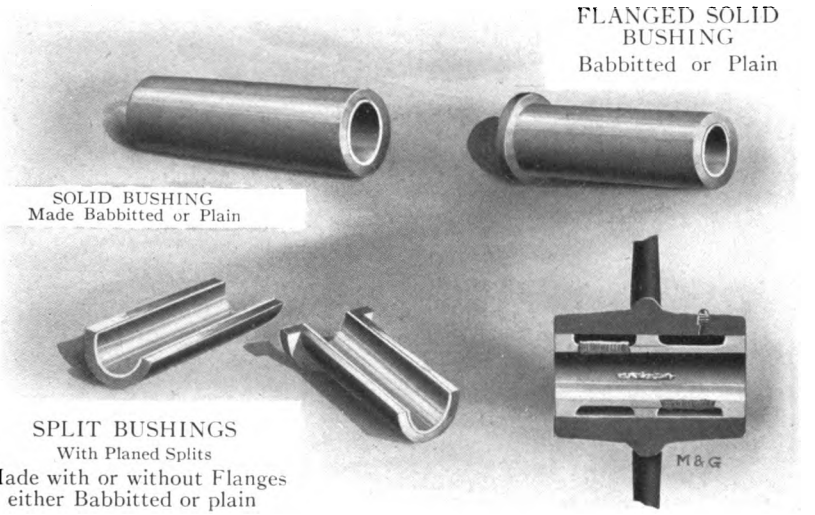
1/4 in. pipe thread ..... 50c. each
3/8 in. pipe thread ..... 60c. each
1/2 in. pipe thread ..... 75c. each

PRICE LIST OF EXTRA LUBRICATOR CANDLES

(Packed in wooden boxes, 100 candles to a box)

1/4 in. diameter $2.00
1/2 in. diameter 2.50
5/8 in. diameter 3.00

BUSHINGS



M & G CAPILLARY BRASS BUSHING
(Sectional view showing it pressed into pulley hub.) Made solid only.

Prices below cover bushings in lengths up to about four times the shaft diameter, and different discounts are applied to the list Plain, Babbitted, Solid and Split bushings.

CAST IRON BUSHINGS—PLAIN OR BABBITTED, SOLID OR SPLIT

Bore Dia.	Outside Dia.	Min. Lgth.	Price min. length	Additional inches each	Flanging per flange	Bore Dia.	Outside Dia.	Min. Lgth.	Price min. length	Additional inches each	Flanging per flange
1 1/16	2 1/4	2	$3.80	$0.55	$0.80	4 1/16	6 3/8	5	$10.25	$1.55	$1.90
1 1/4	2 1/4	"	4.00	.60	.90	4 1/4	6 1/2	"	10.95	1.65	2.00
1 1/4	3 3/16	3	4.20	.65	1.00	4 1/4	6 1/2	"	11.70	1.80	2.10
2 3/16	3 7/16	"	4.40	.70	1.10	5 3/16	7 3/16	6	14.35	1.95	2.20
2 1/16	3 1/2	"	4.65	.75	1.20	5 1/16	7 1/16	"	15.20	2.10	2.25
2 1/4	3 1/2	"	4.90	.85	1.25	5 1/4	7 1/4	"	16.15	2.25	2.35
2 1/4	4 1/16	"	5.15	.90	1.35	5 1/4	8 3/16	"	17.20	2.40	2.45
3 3/16	4 1/4	4	6.45	1.00	1.45	6 3/16	8 1/16	7	20.80	2.55	2.55
3 1/16	4 1/4	"	6.90	1.10	1.55	6 1/16	8 1/4	"	22.15	2.70	2.65
3 1/4	5 3/16	"	7.30	1.20	1.65	6 1/4	8 1/4	"	23.50	2.90	2.75
3 1/4	5 1/4	"	7.75	1.30	1.70	6 1/4	9 1/16	"	25.00	3.10	2.85
4 3/16	5 1/4	5	9.65	1.40	1.80						

BRASS BUSHINGS—SOLID OR SPLIT

1 3/16	1 1/4	2	$2.50	$1.20	$0.75	3 1/16	3 1/8	4	$8.85	$1 55	$1.55
1 1/16	1 1/4	"	2.60	1.25	.80	3 1/4	4 1/16	"	9.45	1.60	1.65
1 1/4	2 1/16	"	2.85	1.25	.90	3 1/4	4 1/4	"	10.25	1.70	1.70
1 1/4	2 7/16	"	3.15	1.30	1.00	4 3/16	4 1/4	5	12.70	1.80	1.80
2 3/16	2 1/4	3	4.15	1.40	1.10	4 1/16	5 3/16	"	13.60	1.95	1.90
2 1/16	2 1/4	"	5.15	1.45	1.20	4 1/4	5 1/16	"	14.50	2.10	2.00
2 1/4	3 3/16	"	5.65	1.45	1.25	4 1/4	5 1/4	"	15.50	2.30	2.10
2 1/4	3 1/16	"	6.15	1.50	1.35	5 1/16	5 1/4	"	16.50	2.50	2.25
3 3/16	3 1/4	4	8.25	1.50	1 45						

M & G CAPILLARY BRASS BUSHINGS

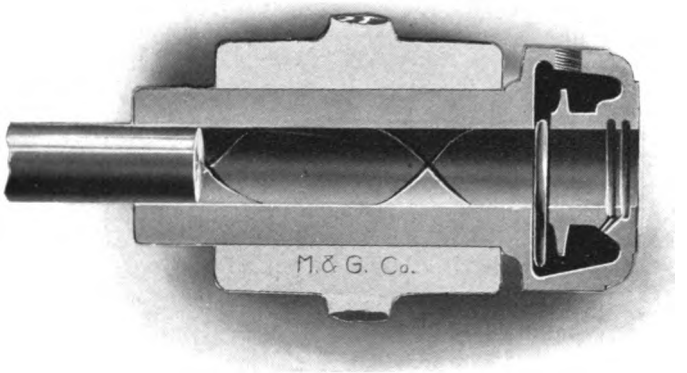
These bushings pictured above are made solid only and are pressed tightly into pulley hubs. Large oil chamber is provided from which oil is fed by capillarity through felt wicks to the shaft.

Prices will be quoted on application as cost depends on lengths wanted on account of pattern work. In asking for prices give exact length of pulley hub and state whether we are to fit bushing into hub.

See also ring-oiling bushings on next page

M & G RING-OILING BUSHINGS

FOR LOOSE PULLEYS, FRICTION CLUTCHES, ETC.



This invention is a *perfect*, self-oiling bushing, and will positively keep the shaft lubricated under any and every condition.

It has large oil reservoir holding a month's supply of oil, which is fed to oil grooves by means of a revolving ring.

Will not drip oil on floor and the bushing works perfectly, even at high speeds.

PRICE LIST (Subject to discount)

Classification	Length in Inches	Standard Bores in Inches							
		1 3/16	1 7/16	1 11/16	1 15/16	2 3/16	2 7/16	2 11/16	2 15/16
No. 4 Sleeve Outside Diameter 2 1/16	4¼	6.80	6.80	6.80	.....	.....	.....	.....	.....
	5¼	7.30	7.00	7.00	.....	.....	.....	.....	.....
	6¼	7.80	7.60	7.60	.....	.....	.....	.....	.....
	7¼	8.80	8.40	8.40	.....	.....	.....	.....	.....
	8¼	10.20	9.90	9.90	.....	.....	.....	.....	.....
	10¼	.....	.....	12.20	.....	.....	.....	.....	.....
No. 5 Sleeve Outside Diameter 2 13/16	4¼	.....	.....	.....	8.30	8.30	.....	.....	.....
	5¼	.....	.....	.....	9.20	9.20	.....	.....	.....
	6¼	.....	.....	.....	10.40	10.40	.....	.....	.....
	7¼	.....	.....	.....	11.40	11.40	.....	.....	.....
	8¼	.....	.....	.....	12.80	12.80	.....	.....	.....
	10¼	.....	.....	.....	14.60	14.60	.....	.....	.....
	12¼	.....	.....	.....	16.60	16.60	.....	.....	.....
No. 6 Sleeve Outside Diameter 3 1/16	5¼	.....	.....	.....	10.80	10.80	11.10	11.40	12.40
	6¼	.....	.....	.....	12.40	12.40	12.70	13.00	14.00
	7¼	.....	.....	.....	14.40	14.40	14.70	15.00	16.00
	8¼	.....	.....	.....	16.40	16.40	16.70	17.00	18.00
	10¼	.....	.....	.....	18.80	18.80	19.10	19.40	20.40
	12¼	.....	.....	.....	21.60	21.60	21.90	22.20	23.20

Lengths given above cover sleeve portion of bushing, i. e., the portion for inserting into hub of pulley. For Table of Dimensions see next page.

For odd bores not listed take price of next larger bore.

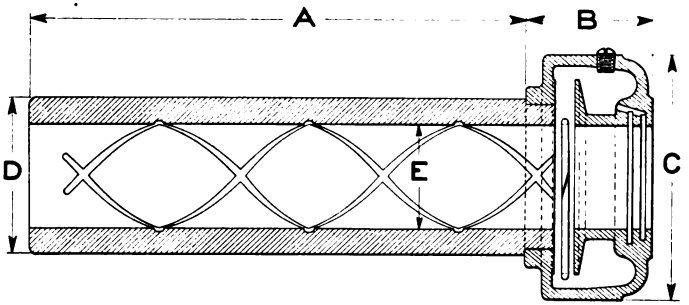
If bushings are desired with different outside diameters from those given, there will be an additional charge of 15 per cent. to the price.

For Split Loose Pulley Bushings see page 66.

M & G RING OILING BUSHINGS (*Continued*)

FOR LOOSE PULLEYS, FRICTION CLUTCHES, ETC.

DIMENSION TABLES



(For price list of these bushings see opposite page.)

ALL DIMENSIONS GIVEN IN INCHES

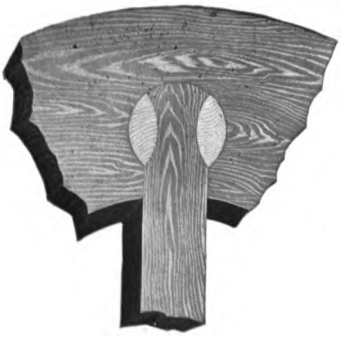
Bushing Number	E Bores	A Standard Lengths of Sleeves							B	C	D	
4A	1 3/16 to 1 7/16	4¼	5¼	6¼	7¼	8¼	10¼	.....	2	4	2 7/16	.....
4B	1½ to 1¾	4¼	5¼	6¼	7¼	8¼	10¼	.....	2	4	2 7/16	.....
5A	1 11/16 to 1 15/16	4¼	5¼	6¼	7¼	8¼	10¼	12¼	2⅜	4⅝	2 15/16	.....
5B	2 to 2¼	4¼	5¼	6¼	7¼	8¼	10¼	12¼	2⅜	4⅝	2 15/16	.....
6A	1 15/16 to 2 3/16	.....	5¼	6¼	7¼	8¼	10¼	12¼	3¼	6	3 7/16	.....
6B	2¼ to 2 9/16	.....	5¼	6¼	7¼	8¼	10¼	12¼	3¼	6	3 7/16	.....
6C	2⅝ to 2 15/16	.....	5¼	6¼	7¼	8¼	10¼	12¼	3¼	6	3 7/16	.....

NOTE—While the above lengths and diameters of sleeves are standard, they may be varied to meet any special condition.

These Ring Oiling Bushings are for high speed idler pulleys, sheaves, sprockets, gears, etc., and insure lubrication under the most trying conditions, requiring refilling with oil only after long intervals.

Pulleys, etc., are simply fastened to sleeve by means of set screws.

GILBERT WOOD SPLIT PULLEYS



Section of Spoke and Rim
of the

GILBERT WOOD SPLIT PULLEY STYLE B

Exhibiting the Fastening

The spokes are built up separate from the rim, and then, **under extreme pressure,** forced into it and **keyed tightly** in place.

The following pages will be devoted to the dissemination of a few **FACTS WORTH KNOWING ABOUT GILBERT WOOD SPLIT PULLEYS.**

And a careful perusal of the facts presented will explain why the Gilbert Wood Split Pulley is steadily gaining in sales year by year, in spite of the many patent pulleys now in competition with it.

Meese & Gottfried Company

PACIFIC COAST AGENTS

GILBERT WOOD SPLIT PULLEYS (*Continued*)

A FEW REASONS WHY WOOD PULLEYS ARE GOOD PULLEYS AND GILBERT WOOD PULLEYS ARE THE BEST WOOD PULLEYS

It has been clearly demonstrated by practical experience that *maple presents a better surface* than any other wood adaptable for pulleys. It is very hard, close and fine grained.

The face of a maple pulley in use soon takes a high polish, which *gives more perfect contact to belt.*

Gilbert Wood Split Pulleys weigh very much less than either solid or split iron or steel pulleys.

Gilbert Wood Split Pulleys have a better belt surface than iron or steel pulleys. Haswell, the acknowledged authority, and most quoted by American mechanics, summarizes thus: "The ratio of friction to pressure for leather belts, when run over wooden pulleys, is 47; over turned cast-iron pulleys, 24." Consequently, equal power can be transmitted with less tension on the belt, which results in a saving in the cost of belting, by prolonging its life, and which reduces the strain on the shafting and the friction of the journal, thus adding to the advantages obtained by the lighter weight of the wood pulley in saving frictional loss in power and in permitting the use of lighter shafting and hangers.

Gilbert Wood Split Pulleys can be put on or taken off the shaft very easily, simply and quickly. They are in correct balance and run true and are safe under heavy loads and at high speeds. They do not get out of round and will withstand more severe shocks and greater compression than other pulleys.

Gilbert Pulleys meet with *little atmospheric resistance*, as the spokes are set to *cut the air*, not to fan it and collect dust, as the spokes of many other pulleys do. This makes a greater difference in the power required than is generally supposed.

Gilbert Pulleys have a *perfect compression shaft fastening.* The wood bushing (furnished to fit any shaft) takes *a tighter hold on the shaft* than set screws do, but, unlike them, does not injure the shaft.

Gilbert Wood Split Pulleys will withstand a greater degree of heat or of moisture than other wooden pulleys, on account of the material of which they are made and the way in which they are built and finished.

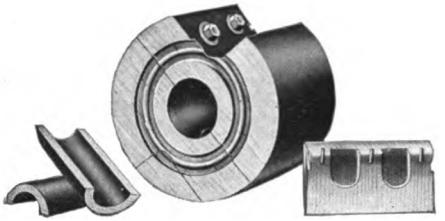
Gilbert Wood Split Pulleys are *perfect* in every mechanical detail, and the greatest care is used in their manufacture.

We carry in stock at all times a large and complete assortment of standard sizes from 3 inches in diameter upward.

All kinds of special pulleys made to order on short notice.

(*Continued on next page*)

GILBERT WOOD SPLIT PULLEYS (*Continued*)
DESCRIPTION OF THE VARIOUS STYLES



STYLE C STOCK PULLEY
As made in sizes 3 to 14 inches diameter.

Made of thoroughly seasoned maple, case hardened, and finished with two coats of varnish.

It is bolted together—the nuts on the clamping bolts being covered with sectional blocks which cannot get out of place.

When putting the pulley on a shaft, all its parts are accessible from the face.

By using different bushings, *the same pulley* may be made to *fit different sizes of shafting*.

Made in sizes from 3 to 14 inches in diameter.

Our Style C Pulley is regarded almost universally as incomparably superior to any similar article manufactured.

STYLE B STOCK PULLEY
(*Four spoke*)
As made in sizes 12 to 24 inches diameter.

Pulleys from 12 inches to 24 inches in diameter, inclusive, are constructed with four sets of spokes, as shown here.

Pulleys from 25 inches to 70 inches in diameter, inclusive, are constructed with six sets of spokes.

Pulleys larger than 70 inches in diameter have eight sets of spokes.

Made of thoroughly seasoned maple, the rim is both nailed and glued, case hardened, and finished with two coats of varnish.

Each spoke is securely dovetailed into and glued in the rim, and is set in a line running direct from the center of the shaft to the rim—thus affording its utmost support.

They meet with *little atmospheric resistance*, as the spokes are set to *cut the air*, not to fan it and collect dust, as the spokes of many other pulleys do.

On all pulleys over 14 inches in diameter, plates are used instead of washers for the nuts on hub clamping bolts, thus distributing the compression over the entire length of the hub.

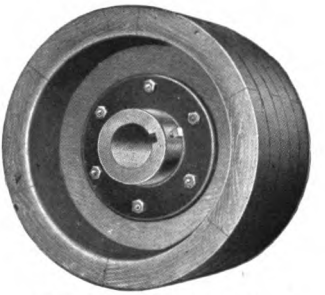
Every pulley is *perfectly balanced*, the rims being turned inside as well as outside.

By using different bushings, the *same pulley* may be made to *fit different sizes of shafting*. Price List of Stock Pulleys on pages 74 and 75.

GILBERT WOOD SPLIT PULLEYS (*Continued*)

DESCRIPTION OF THE VARIOUS STYLES

STYLE B Six Spoke Stock Pulley.



STYLE D Special Pulley.

STYLE A Six Spoke Special Pulley.

STYLE A Eight Spoke Special Pulley.

Gilbert Special Pulleys with iron centers, are built from 2 inches in diameter up to 240 inches. The solid web iron-center pulley, known as the Style "D," is built from 2 inches up to 72 inches in diameter; and the spoke pulley with iron center, known as the Style "A," is built from 24 up to 240 inches in diameter. For all kinds of exceptionally heavy work or high speeds, these are the strongest, truest-running pulleys known. Thousands have been in use for years, some of them running at terrific peripheral speeds. Drop-forge work, brick-making, cement-making, saw-mill hogs and edgers, severe idler and tightener work, trip-hammers and main drives are some of the severe uses to which the special Gilbert Special Pulleys are particularly adapted.

Special pulleys are not carried in stock. Price list of stock pulleys on next page.

GILBERT WOOD SPLIT PULLEYS (*Continued*)

Our stock consists of:

Smallest diameter 3 } Diameter in inches only; no fractions. Faces are in
Largest diameter 60 } inches, with ¼ added in each case to assure belt surface.

Larger diameters can be furnished to order.

Wood bushings to fit pulley to shaft are furnished with these pulleys without extra charge. See table of bores and bushings on page 76.

PRICE LIST (Subject to discount)

Diameter Inches	Faces in Inches						
	2 and 3	4	5	6	8	10	12
3	$2.80	$2.90	$3.10	$3.30	$3.70	.....	.....
4	2.80	2.90	3.10	3.30	3.70	$4.10	$4.50
5	2.85	2.95	3.20	3.40	3.85	4.30	4.75
6	2.90	3.00	3.25	3.50	4.00	4.50	5.00
7	2.95	3.05	3.35	3.60	4.15	4.70	5.25
8	3.00	3.10	3.40	3.70	4.30	4.90	5.50
9	3.10	3.25	3.60	3.90	4.55	5.20	5.85
10	3.25	3.40	3.75	4.10	4.80	5.50	6.20
11	3.50	3.70	4.10	4.50	5.30	6.10	6.90
12	3.75	4.00	4.45	4.90	5.80	6.70	7.60
13	.....	4.30	4.80	5.30	6.30	7.30	8.30
14	.....	4.60	5.15	5.70	6.80	7.90	9.00
15	.....	4.90	5.50	6.10	7.30	8.50	9.70
16	.....	5.20	5.85	6.50	7.80	9.10	10.40
17	.....	5.50	6.20	6.90	8.30	9.70	11.10
18	.....	5.80	6.55	7.30	8.80	10.30	11.80
19	.....	6.10	6.90	7.70	9.30	10.90	12.50
20	.....	6.40	7.25	8.10	9.80	11.50	13.20
22	.....	7.00	7.95	8.90	10.80	12.70	14.60
24	.....	7.70	8.80	9.90	12.10	14.30	16.50
26	.....	8.40	9.65	10.90	13.40	15.90	18.40
28	.....	9.10	10.50	11.90	14.70	17.50	20.30
30	.....	9.80	11.35	12.90	16.00	19.10	22.20
32	.....	10.50	12.20	13.90	17.30	20.70	24.10
34	.....	11.30	13.15	15.00	18.70	22.40	26.10
36	.....	12.10	14.10	16.10	20.10	24.10	28.10
38	.....	.....	.....	17.20	21.50	25.80	30.10
40	.....	.....	.....	18.30	22.90	27.50	32.10
42	.....	.....	.....	19.60	24.60	29.60	34.60
44	.....	.....	.....	20.90	26.30	31.70	37.10
46	.....	.....	.....	22.30	28.10	33.90	39.70
48	.....	.....	.....	23.80	30.00	36.20	42.40
50	.....	.....	.....	25.40	32.00	38.60	45.20
52	.....	.....	.....	27.10	34.10	41.10	48.10
54	.....	.....	.....	28.90	36.30	43.70	51.10
56	.....	.....	.....	30.80	38.60	46.40	54.20
58	.....	.....	.....	32.80	41.00	49.20	57.40
60	.....	.....	.....	34.90	43.50	52.10	60.70

(See next page for wider faces.)

Pulleys up to 30-inch (inclusive) can be had with 3-inch face; where price is not given it is the same as for 4-inch face.

Pulleys up to 14-inch (inclusive) can be had 2-inch face; prices are the same as for 3-inch face.

For table of approximate weights see page 77.

GILBERT WOOD SPLIT PULLEYS (*Continued*)

Please Observe. Gilbert Wood Split Pulleys are stocked in both *crown* and *straight* faces. Crown face pulleys are always furnished unless straight face is specified in ordering.

WIDER FACES

(For smaller faces see preceding page)

PRICE LIST (Subject to discount)

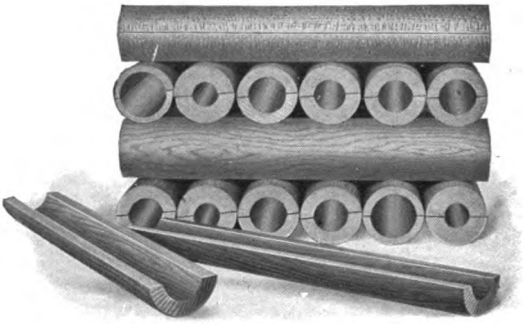
Diameter Inches	Faces in Inches					
	14	16	18	20	22	24
4	.....	.....	.....	.....	.....	.....
5	.....	.....	.....	.....	.....	.....
6	.....	.....	.....	.....	.....	.....
7	$5.80	.....	.....	.....	.....	.....
8	6.10	.....	.....	.....	.....	.....
9	6.50	.....	.....	.....	.....	.....
10	6.90	$7.60	.....	.....	.....	.....
11	7.70	8.50	.....	.....	.....	.....
12	8.50	9.40	$10.30	.....	.....	.....
13	9.30	10.30	11.30	.....	.....	.....
14	10.10	11.20	12.30	$13.40	.....	.....
15	10.90	12.10	13.30	14.50	.....	.....
16	11.70	13.00	14.30	15.60	$16.90	.....
17	12.50	13.90	15.30	16.70	18.10	.....
18	13.30	14.80	16.30	17.80	19.30	$20.80
19	14.10	15.70	17.30	18.90	20.50	22.10
20	14.90	16.60	18.30	20.00	21.70	23.40
22	16.50	18.40	20.30	22.20	24.10	26.00
24	18.70	20.90	23.10	25.30	27.50	29.70
26	20.90	23.40	25.90	28.40	30.90	33.40
28	23.10	25.90	28.70	31.50	34.30	37.10
30	25.30	28.40	31.50	34.60	37.70	40.80
32	27.50	30.90	34.30	37.70	41.10	44.50
34	29.80	33.50	37.20	40.90	44.60	48.30
36	32.10	36.10	40.10	44.10	48.10	52.10
38	34.40	38.70	43.00	47.30	51.60	55.90
40	36.70	41.30	45.90	50.50	55.10	59.70
42	39.60	44.60	49.60	54.60	59.60	64.60
44	42.50	47.90	53.30	58.70	64.10	69.50
46	45.50	51.30	57.10	62.90	68.70	74.50
48	48.60	54.80	61.00	67.20	73.40	79.60
50	51.80	58.40	65.00	71.60	78.20	84.80
52	55.10	62.10	69.10	76.10	83.10	90.10
54	58.50	65.90	73.30	80.70	88.10	95.50
56	62.00	69.80	77.60	85.40	93.20	101.00
58	65.60	73.80	82.00	90.20	98.40	106.60
60	69.30	77.90	86.50	95.10	103.70	112.30

Bushed to fit shaft. See table of bores and bushings on page 76.
Larger sizes furnished to order.
For table of approximate weights see page 77.
For rule to determine size and speed of pulleys see page 149.

GILBERT WOOD SPLIT PULLEYS (*Continued*)

WOOD BUSHINGS FOR STOCK PULLEYS

Stock pulleys are bored as per table below and wood bushings furnished with every pulley when size of shaft necessitates one.



PRICE LIST FOR EXTRA WOOD BUSHINGS
(Subject to Discount)

Outside Diameter Inches	Length Inches	Price	Outside Diameter Inches	Length Inches	Price
1 11/16	2	$0.25	3½	3	$.45
"	3	.30	"	4	.50
"	4	.35	"	5	.55
"	5	.40	"	6	.60
"	6	.45	"	8	.70
"	8	.55	"	10	.80
3	2	.30	"	12	.90
"	3	.35	"	14	1.00
"	4	.40	"	16	1.10
"	5	.45	"	18	1.20
"	6	.50	4½	6	.70
"	8	60	"	8	.80
"	10	70	"	10	.90
"	12	.80	"	12	1.00
"	14	.90	"	14	1.10
"	16	1.00	"	16	1.20
"	18	1.10	"	18	1.30

BORE FOR STANDARD STOCK WOOD PULLEYS

Diameter of Pulleys	Stock Pulleys are bored as given below, and will also go on any smaller size shaft.
3 and 4 inches	1 11/16 inches
5 to 17 inches	3 inches.
18 to 48 inches	3½ inches
50 to 60 inches	4½ inches

Pulleys can be bored larger upon special order.
Price list for Wood Pulleys will be found on preceding page.

GILBERT WOOD SPLIT PULLEYS (*Continued*)

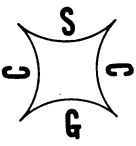
APPROXIMATE WEIGHTS OF STOCK PULLEYS

For price list of Wood Pulleys see pages 74 and 75.

ALL DIMENSIONS IN INCHES. WEIGHTS IN LBS.

Dia. In.	Face of Pulley												
	2	3	4	5	6	8	10	12	14	16	22	24	25
3	½	½	¾	1	1	1¼							
4	¾	1	1¼	1¾	2	2½							
5	1	1¼	1½	1¾	2	3	3½						
6	1½	2	2¾	3	3½	4¾	6	7					
7	1¾	2½	3½	4	5	6½	8½	9¼					
8	2¾	3¼	4¾	5¼	6¼	8¾	10¾	11½					
9	3¾	4¼	7¼	8	8¼	11¼	15	17					
10	4¼	5	8½	9	10	12	16	18					
11	5½	6½	9½	12	13¾	18	22	25	28				
12	5	7½	8½	10	11½	15½	18½	24	29				
13		8	9½	12	14	17	19	25	32				
14		9½	11	13	16	21½	25	33	37½	39			
15		10	12	14	17	25	28	34	40	45			
16		12	13½	18	19	26	31	41	46	52			
17		12	15	19	20	28	34	44	50	55			
18		13½	16	20	22	29	35	46	53	62			
19		14	16	22	24	30	38	48	56	65			
20		16	19	24	26	34	42	51	60	67			
21		18	20	26	28	38	48	58	63	69			
22		18	21	28	29	39	50	60	69	77			
23		19	22	29	30	40	52	62	72	80			
24		20	25	32	34	42	55	69	77	86			
25		24	28	36	40	56	65	84	96	105			
26		25	30	38	41	57	68	86	102	110			
27		26	32	40	42	59	72	94	104	112			
28		27	32	41	44	61	73	95	107	115			
30		28	34	44	46	65	76	100	110	120			
32			35	45	49	66	88	105	116	125			
34			39	48	53	70	86	113	119	138			
36			44	48	60	79	92	122	139	159			
38			48	55	62	84	99	134	152	166			
40			51	58	66	89	104	138	158	178			
42			53	60	67	92	108	145	164	190			
44			54	62	70	96	112	150	175	200			
46			56	65	75	100	123	160	188	210			
48			69	81	93	116	155	186	206	222		340	
50					101	123	170	180	204				
52					110	135		185	209				
54					115	135	170	200	220				405
56					120	150	180	220	250	285			
58					120		181		253				
60					125	150		245	280		415		

"CUMBERLAND TURNED AND GROUND" STEEL SHAFTING

TRADE  MARK

We are Pacific Coast agents for, and carry in stock, "*Cumberland Turned and Ground*" Steel Shafting, an article perfectly *round, smooth, straight* and *true* in *size.* It is the *strongest* and *most perfect shafting* in the market.

A FEW WORDS ON SHAFTING

We desire to call your attention to the following remarks regarding Cumberland Turned and Ground Shafting:

To some customers, who are not well informed, one shaft is as good as another; the price is the only thing they care to consider. There are others who consider quality as well as price. To these two classes of buyers we would direct our remarks.

When several manufacturers claim they make the best, how are you to decide among them? You cannot, unless you have tried each kind or have been properly informed in regard to the difference.

It is generally known that Turned Shafting, when properly made, is more desirable, as there is no lamination of the surface of the metal, nor is it subjected to internal strains.

Taking it for granted that Turned Shafting is the best, is there any difference in Turned Shafting? Any first-class mechanic knows that it is almost impossible to turn a shaft perfectly round or parallel, owing to the difference in metal, wear of tools, etc., and if he uses a file to make it true he does not succeed. When necessary to have a perfect surface, he will *grind* it. That is just what is done in the manufacture of "Cumberland Turned and Ground" Shafting, and it is the difference between Cumberland Shafting and that made by all other manufacturers.

The advantages of Turned and Ground Shafting are: First, being round and straight it can be run at a very high speed without heating of journals; Second, being very highly polished it is more attractive in appearance—the surface being free from lamination makes it very desirable for piston rods, etc.; Third, having no internal strains due to the process of manufacture, it is very desirable where strength is required, preventing accidents, loss of time, money and lives. Fourth, being true to size, couplings, gearings, etc., can be fitted at less cost.

"Cumberland Turned and Ground" Shafting embraces all sizes from $1\frac{3}{16}$ to $5\frac{15}{16}$. Smaller sizes are furnished in cold drawn; larger sizes in hammered steel.

Price list on next page.

"CUMBERLAND TURNED AND GROUND" STEEL SHAFTING (*Continued*)

PRICE LIST OF STEEL SHAFTING

New List Effective April 21, 1915 (Send for current base price.)

Diameter of shaft	Weight per foot	Price per lb., cts.	Diameter of shaft	Weight per foot	Price per lb., cts.
3/16	.095	2½ Advance	2	10.68	Base
1/4	.167	1½ "	2 3/16	12.78	"
5/16	.261	1½ "	2 1/4	13.52	"
3/8	.375	1½ "	2 3/8	15.07	"
7/16	.511	1 "	2 7/16	15.87	"
1/2	.667	1 "	2 1/2	16.69	"
9/16	.845	1 "	2 5/8	18.41	"
5/8	1.05	¾ "	2 11/16	19.29	"
11/16	1.26	¾ "	2 3/4	20.20	"
3/4	1.50	½ "	2 15/16	23.04	"
13/16	1.77	" "	3	24.03	"
7/8	2.04	" "	3 3/16	27.13	½ Advance
15/16	2.35	" "	3 1/4	28.21	½ "
1	2.67	" "	3 7/16	31.56	½ "
1 1/16	3.02	" "	3 1/2	32.71	¾ "
1 1/8	3.38	" "	3 11/16	36.31	" "
1 3/16	3.77	" "	3 3/4	37.56	" "
1 1/4	4.17	" "	3 15/16	41.40	" "
1 5/16	4.60	" "	4	42.73	1 "
1 3/8	5.05	" "	4 3/16	46.83	" "
1 7/16	5.52	" "	4 1/4	48.24	" "
1 1/2	6.01	¼ "	4 7/16	52.58	" "
1 5/8	7.05	¼ "	4 1/2	54.07	1½ "
1 11/16	7.61	¼ "	4 15/16	65.10	" "
1 3/4	8.18	¼ "	5	66.76	2 "
1 7/8	9.39	¼ "	5 7/16	78.95	" "
1 15/16	10.02	¼ "	5 15/16	94.14	2¾ "

Our stock lengths are 20 and 24 feet long. For these lengths no charge for cutting is made. We also have in stock a lot of sundry shafts cut from stock lengths; *these we sell as cuttings*, if not recut. "Cumberland Turned and Ground" shafting embraces all sizes from 1 3/16 to 5 15/16. Smaller sizes are furnished in cold drawn; larger sizes in hammered steel. Special sizes turned to order. Prices on shafts larger than listed will be quoted on application. For keyseating and cutting to special lengths, see page 80. For table of Horsepower of Steel Shafting see pages 80 and 81.

BOXING AND BURLAPPING, NET CHARGES

Boxing (minimum 75c.) Larger boxes at cost.

Burlapping (minimum 25c.) Larger shafts or quantities at cost.

Burlapping of ends only, 5c per 100 pounds.

We recommend that all less than carload shipments be boxed. If the buyer is unwilling to bear the expense of boxing, we will not be responsible for safe delivery, nor will we entertain claims for bent or damaged bars.

Customer should state with order if wanted boxed or unboxed.

Send for latest Base Price and enter below.

Base Price.....cts. Date.....19

KEYSEATING AND CUTTING SHAFTS

NOTE—When shafts spring out of true from keyseating an extra charge is made for straightening.

PRICE LIST (Subject to discount)

Dia. of shaft	Keyseating per foot or less	Cutting for each cut	Dia. of shaft	Keyseating per foot or less	Cutting for each cut	Dia. of shaft	Keyseating per foot or less	Cutting for each cut
1/4 to 3/4	.....	$0.15	2 7/16	$0.60	$0.50	4 3/16	$1.30	$1.45
13/16 to 1 1/8	.....	.20	2 11/16	.65	.60	4 7/16	1.45	1.65
1 3/16	$0.35	.25	2 15/16	.70	.75	4 15/16	1.60	1.90
1 7/16	.40	.30	3 3/16	.80	.35	5 7/16	2.00	2.25
1 11/16	.45	.35	3 7/16	.90	1.00	5 15/16	2.50	2.75
1 15/16	.50	.40	3 11/16	1.00	1.15			
2 3/16	.55	.45	3 15/16	1.15	1.30			

For table of standard keyways see page 85.

When ordering keyseated shafts, it should be plainly stated whether keyseat ends are to be left as made by the milling cutter, and if length wanted is top or bottom measure, if ends are to be drilled and bottom chipped level, or if ends are to be squared. See illustrations on page 84.

HORSEPOWERS OF SHAFTS

$$H.P. = \frac{D^3 \times R}{75}$$; R = R.P.M. (*FOR GENERAL SERVICE)

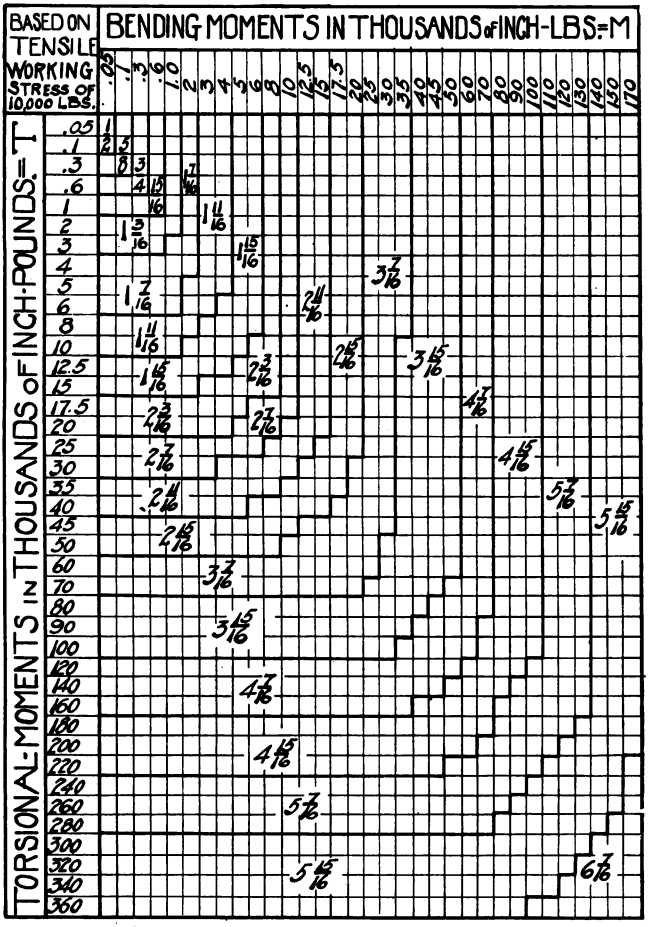
Shaft (D = Dia.)		Revolutions per Minute								
D	D^3	100	125	150	175	200	250	300	400	500
1 3/16	1.674	2.3	2.8	3.4	4	4.5	6	7	9	11
1 7/16	2.970	4	5	6	7	8	10	12	16	20
1 11/16	4.805	6.5	8	10	11	13	16	19	26	32
1 15/16	7.273	9.8	12	15	17	20	24	29	39	49
2 3/16	10.46	14	17	21	24	28	35	42	56	70
2 7/16	14.48	19	24	29	34	39	49	58	78	97
2 11/16	19.41	26	32	39	46	52	65	78	104	130
2 15/16	25.34	34	43	51	60	68	85	102	135	169
3 3/16	32.38	43	54	65	76	87	108	130	173	216
3 7/16	40.62	55	68	82	95	108	136	163	217	271
3 11/16	50.14	67	84	100	117	134	167	201	268	335
3 15/16	61.05	82	102	122	143	163	204	245	326	408
4 7/16	87.38	117	146	175	204	233	291	350	465	.....
4 15/16	120.37	161	201	241	281	322	401	482	643	.....
5 7/16	161.77	216	270	324	378	432	540	648	.....	.....
5 15/16	209.33	280	350	420	490	560	700	.....	.....	.....

*For ordinary transmission of power involving no bending, a good grade of shafting may be used for 50 per cent more H. P. than given in table, but for head shafts and heavy work it is advisable to use 40 per cent less than H. P. given in table.

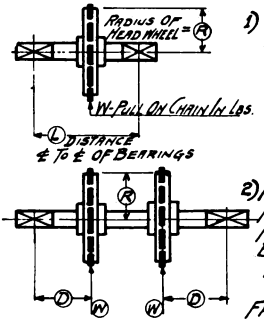
For table of torsion and bending see next page.

SHAFTING DATA

Sizes of shafting required for Combined Bending and Torsion (From Link Belt Co., Rearranged.) (Price list of shafting given on page 79.)



THE FOLLOWING EXAMPLES WILL SERVE TO ILLUSTRATE THE USE OF THE ABOVE DIAGRAM.



1) AN ELEVATOR HAS A 36" DIA. HEADWHEEL WITH A CHAIN PULL OF 1000 LBS. THE ℄ TO ℄ OF BEARINGS IS 48 INCHES. WHAT SIZE SHAFT IS REQUIRED?

$M = \frac{W \times L}{4} = \frac{1000 \times 48}{4} = 12000$ INCH POUNDS

$T = W \times R = 1000 \times 18 = 18000$ INCH POUNDS.

BY FOLLOWING THE RESPECTIVE MOMENTS TO THEIR INTERSECTION IN THE DIAGRAM WE FIND THAT A SHAFT 2 11/16" IS THE PROPER SIZE.

2) A CONVEYOR HAS TWO 48" HEADWHEELS THE CHAIN PULL ON EACH SPROCKET IS 2000 LBS. THE DISTANCE FROM THE ℄ OF EACH SPROCKET TO ℄ OF EACH BEARING IS 12=WHAT IS THE PROPER SIZE SHAFT?

$M = W \times D = 2000 \times 12 = 24000$ INCH POUNDS

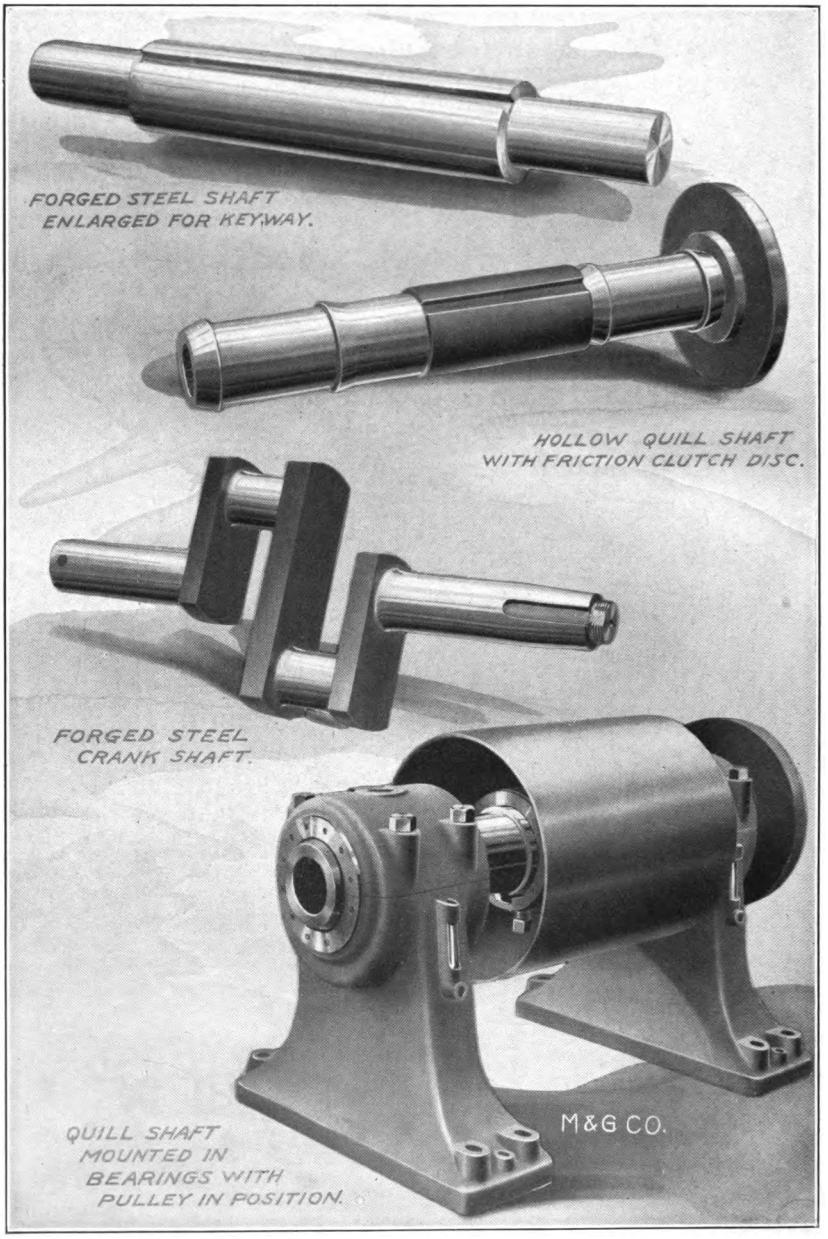
$T = 2W \times R = 2 \times 2000 \times 24 = 96000$ INCH POUNDS

FROM DIAGRAM FIND A 3 7/16" SHAFT SHOULD BE USED.

SHAFTING (*Continued*)

We are in a position to furnish special shafts of every description. Crank Shafts, Quill Shafts, etc., etc.

In writing for prices of special shafts send sketch showing just what is wanted, giving size and position of keyseats, etc.



COLD ROLLED SQUARES, FLATS AND HEXAGONS

These forms are of cold rolled steel, such as we use for straight keys, splines, etc.

We originally stocked this material for use in our own shops, but receiving as we have, so many outside calls for it, we decided to list, for our patrons, such sizes as we have found most useful.

COLD ROLLED STEEL SQUARES

For Keys, Splines and Square Shafts. (Bars 10 to 13 feet long.)

Size Inches	Weight per foot, Lbs.	Price per Lb.	Size Inches	Weight per foot, Lbs.	Price per Lb.
1/4	.212	3c above base	1	3.40	Base Price
5/16	.332	3c " "	1 1/4	5.31	" "
3/8	.479	2 " "	1 3/8	6.43	" "
7/16	.652	2 " "	1 1/2	7.65	" "
1/2	.850	1 1/2 " "	1 5/8	8.98	" "
9/16	1.08	1 1/2 " "	1 3/4	10.41	" "
5/8	1.33	1 1/2 " "	1 7/8	11.95	" "
11/16	1.61	3/4 " "	2	13.60	" "
3/4	1.92	3/4 " "	2 1/4	17.24	1c above base
13/16	2.25	3/4 " "	2 1/2	21.26	1 1/2 " "
7/8	2.60	Base price	2 3/4	25.72	1 1/2 " "
15/16	2.99	" "	3	30.60	1 1/2 " "

COLD ROLLED STEEL FLATS (Bars 8 to 10 feet long.)

Width in Inches	Thickness in Inches									
	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1
5/16	8c	8c	.....	.....	.....	.....	.....	.....	.....	.....
3/8	"	"	8c	.....	.....	.....	.....	.....	.....	.....
7/16	"	"	"	6c	.....	.....	.....	.....	.....	.....
1/2	"	"	"	"	6c	.....	.....	.....	.....	.....
5/8	"	"	"	"	"	2c	.....	.....	.....	.....
3/4	4c	4c	4c	3c	3c	"	2c	.....	.....	.....
7/8	"	"	"	"	"	"	"	Base	.....	.....
1	"	"	"	"	"	"	"	"	Base	.....
1 1/4	3c	3c	3c	"	"	"	"	"	"	Base
1 1/2	"	"	"	"	"	"	"	"	"	"
1 3/4	"	"	"	"	"	"	"	"	"	"
2	"	"	"	"	"	"	"	"	"	"
2 1/4	"	"	"	"	"	"	"	"	"	"
2 1/2	"	"	"	"	"	"	"	"	"	"
2 3/4	"	"	"	"	"	"	"	"	"	"
3	"	"	"	"	"	"	"	"	"	"

Prices given above are *in addition* to base price per pound.

COLD ROLLED STEEL HEXAGON (Bars 10 to 13 feet long.)

Sizes from 1/4 to 5/16 inches, price per lb.....3c above base price.
" " 3/8 " 7/16 " " " .....2c " " "
" " 1/2 " 5/8 " " " .....1 1/2c " " "
" " 11/16 " 13/16 " " " .....3/4c " " "
" " 7/8 " 2 " " " .....Base price.

Note—All the above prices are for full length bars.
For short lengths a nominal charge is made for cutting.
Send for current Base Price.
For table of weights see pages 152 and 153.

KEYS AND KEYSEATING

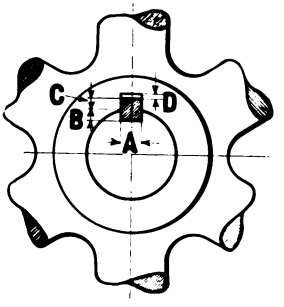
Machine keys are of two kinds—*straight* and *tapered*.

For pulleys, sprockets, sheaves, etc., we have adopted as our standard, the *straight* key with straight keyseats cut to a depth of *one-half the width* of key in both shaft and hub, plus a slight clearance in hub (for bur caused by setscrews) as shown at "D" in sketch below.

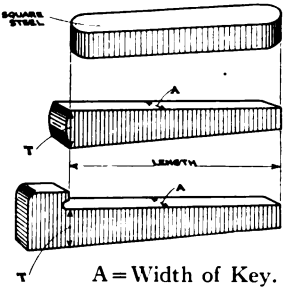
Depth of keyseats for taper keys is as given in table on next page.

Straight Keys are *always* furnished unless taper keys are specifically mentioned in ordering.

Setscrews are always supplied over straight keys.



A = Width of Key.
B = Depth of Keyseat in shaft.
C = Depth of Keyseat in hub.
D = Clearance for bur caused by setscrews and is about $\frac{1}{32}$ inch for shafts up to $2\frac{3}{8}$ inch. $\frac{1}{16}$ inch for shafts from $2\frac{7}{16}$ to $5\frac{3}{8}$.
$\frac{3}{32}$ inch for shafts above $5\frac{3}{8}$.



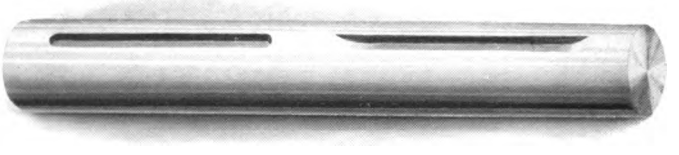
A = Width of Key.

STRAIGHT KEY
(Made with round or square ends)

PLAIN TAPER KEY

GIB HEAD TAPER KEY

T = Thickness at large end to correspond with total depth of keyseat at deep end.



Drilled End Keyseat or Featherway

Standard Keyseat, (with ends as left by milling cutter)

"Length of Keyseat" always means "over all" or from the extreme ends.

Table of Standard Taper and Straight Keyways is given on next page—price list for cutting Keyways on page 80.

SPECIAL NOTE—When *shafts only* are ordered with Keyseats, we will cut them suitable for our standard *taper* keys (see dimension table next page) *unless* exact width and depth is specified on the order.

For example:—1 shaft $1\frac{15}{16}$x10 feet long to have Keyseat 12 inches long in center.

We would cut a Keyseat $\frac{1}{2}$ inch wide by $\frac{5}{32}$ inch deep by 12 inches long.

M & G STANDARD SIZES OF KEYWAYS

Price list for cutting Keyways given on page 80.

Shaft Diameter Inches	Width of Keyseat	For Taper Keyseats Taper in Hub Equals $\frac{3}{16}$" per ft. *Depth for Taper Keys		**Depth in both Shaft and Hub for Straight Keys
		In Shaft	In Hub at Deep End	
$\frac{15}{16}$ to $1\frac{1}{8}$ inclusive	$\frac{1}{4}$ inch	$\frac{3}{32}$ inch	$\frac{5}{32}$ inch	$\frac{1}{8}$
$1\frac{3}{16}$ to $1\frac{3}{8}$ "	$\frac{5}{16}$ "	$\frac{3}{32}$ "	$\frac{5}{32}$ "	$\frac{5}{32}$
$1\frac{7}{16}$ to $1\frac{5}{8}$ "	$\frac{3}{8}$ "	$\frac{1}{8}$ "	$\frac{3}{16}$ "	$\frac{3}{16}$
$1\frac{11}{16}$ to $1\frac{7}{8}$ "	$\frac{7}{16}$ "	$\frac{5}{32}$ "	$\frac{7}{32}$ "	$\frac{7}{32}$
$1\frac{15}{16}$ to $2\frac{1}{8}$ "	$\frac{1}{2}$ "	$\frac{5}{32}$ "	$\frac{9}{32}$ "	$\frac{1}{4}$
$2\frac{3}{16}$ to $2\frac{3}{8}$ "	$\frac{9}{16}$ "	$\frac{3}{16}$ "	$\frac{5}{16}$ "	$\frac{9}{32}$
$2\frac{7}{16}$ to $2\frac{5}{8}$ "	$\frac{5}{8}$ "	$\frac{7}{32}$ "	$\frac{11}{32}$ "	$\frac{5}{16}$
$2\frac{11}{16}$ to $2\frac{7}{8}$ "	$\frac{11}{16}$ "	$\frac{1}{4}$ "	$\frac{3}{8}$ "	$\frac{11}{32}$
$2\frac{15}{16}$ to $3\frac{1}{8}$ "	$\frac{3}{4}$ "	$\frac{1}{4}$ "	$\frac{7}{16}$ "	$\frac{3}{8}$
$3\frac{3}{16}$ to $3\frac{3}{8}$ "	$\frac{13}{16}$ "	$\frac{9}{32}$ "	$\frac{15}{32}$ "	$\frac{13}{32}$
$3\frac{7}{16}$ to $3\frac{5}{8}$ "	$\frac{7}{8}$ "	$\frac{5}{16}$ "	$\frac{1}{2}$ "	$\frac{7}{16}$
$3\frac{11}{16}$ to $3\frac{7}{8}$ "	$\frac{15}{16}$ "	$\frac{5}{16}$ "	$\frac{1}{2}$ "	$\frac{15}{32}$
$3\frac{15}{16}$ to $4\frac{3}{8}$ "	1 "	$\frac{3}{8}$ "	$\frac{9}{16}$ "	$\frac{1}{2}$
$4\frac{7}{16}$ to $4\frac{7}{8}$ "	$1\frac{1}{8}$ "	$\frac{7}{16}$ "	$\frac{9}{16}$ "	$\frac{9}{16}$
$4\frac{15}{16}$ to $5\frac{3}{8}$ "	$1\frac{1}{4}$ "	$\frac{7}{16}$ "	$\frac{11}{16}$ "	$\frac{5}{8}$
$5\frac{7}{16}$ to $5\frac{7}{8}$ "	$1\frac{3}{8}$ "	$\frac{15}{32}$ "	$\frac{25}{32}$ "	$\frac{11}{16}$
$5\frac{15}{16}$ to $6\frac{3}{8}$ "	$1\frac{1}{2}$ "	$\frac{1}{2}$ "	$\frac{7}{8}$ "	$\frac{3}{4}$
$6\frac{7}{16}$ to $6\frac{7}{8}$ "	$1\frac{5}{16}$ "	$\frac{17}{32}$ "	$\frac{31}{32}$ "	$\frac{13}{16}$
$6\frac{15}{16}$ to $7\frac{3}{8}$ "	$1\frac{3}{4}$ "	$\frac{19}{32}$ "	$1\frac{1}{32}$ "	$\frac{7}{8}$
$7\frac{7}{16}$ to $7\frac{7}{8}$ "	$1\frac{7}{8}$ "	$\frac{5}{8}$ "	$1\frac{1}{8}$ "	$\frac{15}{16}$
$7\frac{15}{16}$ to $8\frac{3}{8}$ "	2 "	$\frac{3}{4}$ "	$1\frac{1}{8}$ "	1

*Depth in hub for taper key is usually cut about $\frac{1}{64}$ inch less than given in table to allow key to project.

**Depth in hub for straight key is cut slightly deeper than figures in table to allow for clearance of setscrew bur as explained on opposite page.

KEYSEATING

(Abbreviations and terms defined)

K. S. signifies Keyseat and always refers to a *straight keyseat* unless *taper k. s.* is specified.

S. S. signifies Setscrews always supplied over straight keyseats but never over taper keyseats unless specifically ordered, thus: "Taper K. S. with S. S. over."

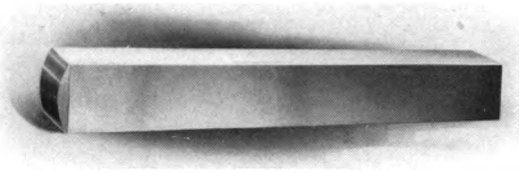
K. S. and Fitted signifies that article is to be keyseated and fitted to shaft with *straight key.*

Taper K. S. and Fitted signifies that article is to be taper keyseated and fitted to shaft with *driven taper key.*

F. W. signifies Featherway in shaft having ends drilled and suitable for Feathers.

PLAIN TAPER MACHINE KEYS

Gib Head Taper Machine Keys listed on page 88.



PRICE PER HUNDRED

(Subject to Discount)

Length of Keys in Inches	*WIDTH OF KEY									
	3/16	1/4	5/16	3/8	7/16	1/2	9/16	5/8	11/16	3/4
1	$4.26	$4.60	$4.75	$5.08	.....	.....	.....	.....	.....	.....
1½	4.60	4.95	5.20	5.59	.....	.....	.....	.....	.....	.....
2	4.92	5.36	5.64	6.12	$7.20	$8.48	$9.16	.....	.....	.....
2½	5.36	5.78	6.08	6.65	7.78	9.16	10.14	$11.38	$12.38	.....
3	5.58	6.20	6.54	7.17	8.36	9.84	11.12	12.61	13.88	$15.48
3½	5.90	6.60	7.00	7.70	8.94	10.52	12.10	13.84	15.38	17.32
4	6.24	7.00	7.45	8.23	9.52	11.20	13.08	15.07	16.88	19.16
4½	.....	7.42	7.93	8.76	10.10	11.88	14.06	16.30	18.38	21.00
5	.....	7.84	8.38	9.28	10.68	12.56	15.04	17.53	19.88	22.84
5½	.....	8.25	8.84	9.82	11.26	13.24	16.02	18.76	21.38	24.68
6	.....	8.66	9.30	10.34	11.84	13.92	17.00	20.00	22.88	26.52
6½	.....	9.07	9.76	10.66	12.42	14.60	17.98	21.22	24.38	28.36
7	.....	9.48	10.22	10.94	13.00	15.28	18.96	22.45	25.88	30.20
7½	.....	9.89	10.68	11.26	13.58	15.96	19.94	23.68	27.38	32.04
8	.....	10.30	11.14	11.58	14.16	16.64	20.92	24.91	28.88	33.88
8½	.....	.....	.....	11.90	14.74	17.32	21.90	26.14	30.38	35.72
9	.....	.....	.....	12.22	15.32	18.00	22.88	27.37	31.88	37.56
9½	.....	.....	.....	12.54	15.90	18.68	23.86	28.60	33.38	39.40
10	.....	.....	.....	12.86	16.48	19.36	24.84	29.83	34.88	41.24
10½	.....	.....	.....	.....	.....	20.04	25.82	31.06	36.38	43.08
11	.....	.....	.....	.....	.....	20.72	26.80	32.29	37.88	44.92
11½	.....	.....	.....	.....	.....	.....	.....	.....	39.38	46.76
12	.....	.....	.....	.....	.....	.....	.....	.....	40.88	48.60

(*Price List continued next page*)

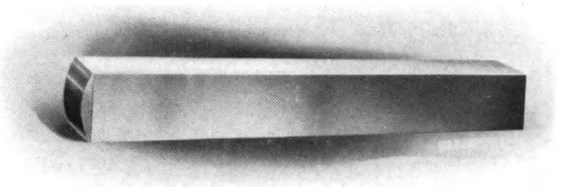
*Thickness at large end is same as for Gib Head Keys shown on page 88 at lower part of table. Table of Standard Keyseats will be found on page 85.

Standard taper of taper keys equals 3-16 inch per foot.

For Straight or Feather Keys use square steel as listed on page 83.

PLAIN TAPER MACHINE KEYS (*Continued*)

Gib Head Taper Machine Keys listed on next page.



PRICE PER HUNDRED
(Subject to Discount)

Length of Keys in Inches	*WIDTH OF KEY							
	11/16	7/8	13/16	1	1 1/8	1 1/4	1 3/8	1 1/2
3	$19.54	$23.35	$27.90	$32.50	.....	.....	.....	.....
3½	21.35	25.53	30.28	35.12	.....	.....	.....	.....
4	23.16	27.72	32.66	37.74	$45.00	$55.00	$70.00	$85.00
4½	24.97	29.89	35.04	40.36	48.85	59.65	75.90	91.50
5	26.78	32.07	37.42	42.98	52.70	64.30	81.80	98.10
5½	28.59	34.25	39.80	45.60	56.55	68.95	87.70	104.70
6	30.40	36.43	42.18	48.22	60.40	73.60	93.60	111.30
6½	32.21	38.61	44.56	50.84	64.25	78.25	99.50	117.90
7	34.00	40.79	46.94	53.46	68.10	82.90	105.40	124.50
7½	35.83	42.97	49.32	56.08	71.95	87.55	111.30	131.10
8	37.64	45.15	51.70	58.70	75.80	92.20	117.20	137.70
8½	39.45	47.33	54.08	61.32	79.75	96.85	123.10	144.30
9	41.26	49.51	56.46	63.94	83.60	101.50	129.00	150.90
9½	43.07	51.69	58.84	66.56	87.45	106.15	134.90	157.50
10	44.88	53.87	61.22	69.18	91.30	110.80	140.80	164.10
10½	46.69	56.05	63.60	71.80	95.15	115.25	146.70	170.70
11	48.50	58.23	65.98	74.42	99.00	120.10	152.60	177.30
11½	50.31	60.41	68.36	77.04	102.85	124.75	158.50	183.90
12	52.12	62.59	70.74	79.66	106.70	129.40	164.40	190.50
12½	53.93	64.77	73.12	82.28	110.55	134.05	170.30	197.10
13	55.74	66.95	75.50	84.90	114.40	138.70	176.20	203.70
13½	57.55	69.13	77.88	87.52	118.25	143.35	182.10	210.30
14	59.36	71.34	80.26	90.14	122.10	148.00	188.00	216.90
14½	.....	.....	.....	.....	125.95	152.55	193.90	223.50
15	.....	.....	.....	.....	129.80	157.30	199.80	230.10
15½	.....	.....	.....	.....	133.65	161.95	205.70	236.70

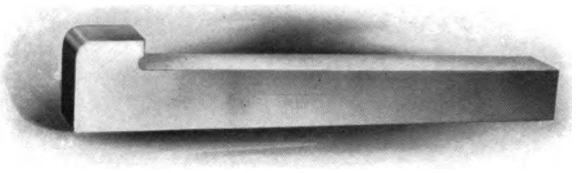
*Thickness at large end is same as for Gib Head Keys shown on page 89 at upper part of table. Table of standard Keyseats will be found on page 85.

Standard taper of taper keys equals $\frac{3}{16}$ inch per foot.

For Straight or Feather Keys use square steel as listed on page 83.

GIB HEAD TAPER MACHINE KEYS

Plain Taper Machine Keys listed on page 86.



PRICE PER HUNDRED
(Subject to Discount)

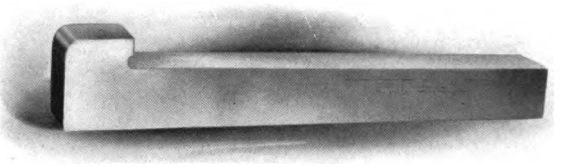
Length of Keys under Head Inches	*WIDTH OF KEY									
	3/16	1/4	5/16	3/8	7/16	1/2	9/16	5/8	11/16	3/4
1	$7.75	$8.35	$9.00	$9.70	.....	.....	.....	.....	.....	.....
1½	8.35	9.00	9.88	10.70	.....	.....	.....	.....	.....	.....
2	8.95	9.75	10.75	11.70	$13.55	$15.40	$16.66	.....	.....	.....
2½	9.55	10.50	11.62	12.70	14.85	17.00	18.83	$20.68	$22.52	.....
3	10.15	11.25	12.50	13.72	16.15	18.60	21.00	23.38	25.77	$28.15
3½	10.75	12.00	13.38	14.73	17.45	20.20	23.17	26.11	29.07	32.00
4	11.35	12.75	14.26	15.74	18.75	21.80	25.34	28.84	32.37	35.86
4½	.....	13.50	15.15	16.75	20.05	23.40	27.51	31.67	35.67	39.72
5	.....	14.25	16.03	17.76	21.35	25.00	29.68	34.40	38.97	43.58
5½	.....	15.00	16.90	18.77	22.65	26.60	31.85	37.13	42.27	47.44
6	.....	15.75	17.78	19.78	23.95	28.20	34.02	39.86	45.56	51.30
6½	.....	.....	.....	20.79	25.25	29.80	36.19	42.59	48.85	55.15
7	.....	.....	.....	21.80	26.60	31.40	38.36	45.32	52.14	59.00
7½	.....	.....	.....	22.80	27.90	33.00	40.53	48.05	55.43	62.85
8	.....	.....	.....	23.80	29.20	34.60	42.70	50.78	58.72	66.70
8½	.....	.....	.....	24.80	30.50	36.20	44.87	53.50	62.01	70.55
9	.....	.....	.....	25.80	31.80	37.80	47.04	56.22	65.30	74.40
9½	.....	.....	.....	.....	.....	39.40	49.21	58.95	68.59	78.25
10	.....	.....	.....	.....	.....	41.00	51.35	61.68	71.88	82.10
10½	.....	.....	.....	.....	.....	42.60	53.49	64.51	75.17	85.95
11	.....	.....	.....	.....	.....	44.20	55.63	67.24	78.47	89.80
11½	.....	.....	.....	.....	.....	45.80	57.77	69.97	81.77	93.65
12	.....	.....	.....	.....	.....	47.40	59.91	72.70	85.10	97.50
12½	.....	.....	.....	.....	.....	.....	.....	.....	.....	101.35
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	105.20
13½	.....	.....	.....	.....	.....	.....	.....	.....	.....	109.05
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	112.90
14½	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
15½	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	3/16	1/4	1/4	5/16	3/8	7/16	1/2	9/16	5/8	11/16

(*Price List continued next page*)

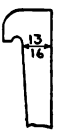
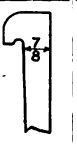
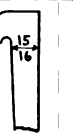
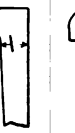
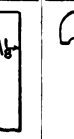
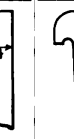
*Sketches below list show thickness at large end of key.
Standard taper of taper keys equals 3/16 inch per foot.
See table of Standard Keyseats on page 85.
For Straight or Feather Keys use square steel listed on page 83.

GIB HEAD TAPER MACHINE KEYS (*Continued*)

Plain Taper Machine Keys listed on page 87.



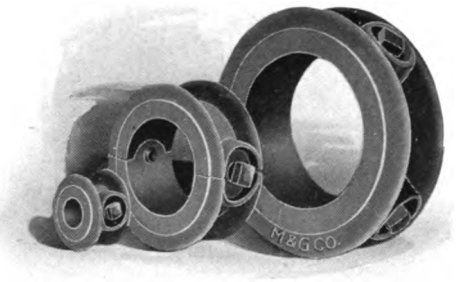
PRICE PER HUNDRED
(Subject to Discount)

Length of Keys under Head Inches	*WIDTH OF KEY							
	11/16	7/8	11/16	1	1 1/8	1 1/4	1 3/8	1 1/2
								
1	.....	.....	.....	.....	.....	.....	.....	.....
1½	.....	.....	.....	.....	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	.....
2½	.....	.....	.....	.....	.....	.....	.....	.....
3	$37.36	$47.58	$55.78	$65.00	.....	.....	.....	.....
3½	41.28	51.92	60.63	70.25	.....	.....	.....	.....
4	45.20	56.29	65.48	75.50	$99.98	$129.18	$158.15	.....
4½	49.12	60.65	70.33	80.75	106.89	137.73	168.40	.....
5	53.04	65.00	75.18	86.00	113.80	146.28	178.65	$206.34
5½	56.96	69.37	80.03	91.25	120.71	154.83	188.90	218.17
6	60.88	73.73	84.88	96.50	127.62	163.38	199.15	230.00
6½	64.80	78.09	89.73	101.75	134.53	171.93	209.39	241.83
7	68.72	82.45	94.58	107.00	141.44	180.48	219.63	253.66
7½	72.64	86.81	99.43	112.25	148.35	189.03	229.87	265.49
8	76.56	91.17	104.28	117.50	155.26	197.58	240.00	277.33
8½	80.48	95.53	109.13	122.75	162.17	206.13	250.26	289.16
9	84.40	99.89	113.98	128.00	169.08	214.68	260.50	301.00
9½	88.32	104.25	118.83	133.25	175.99	223.23	270.76	312.83
10	92.24	108.60	123.68	138.50	182.90	231.78	281.00	324.66
10½	96.16	112.97	128.53	143.75	189.81	240.33	291.26	336.49
11	100.08	117.33	133.38	149.00	196.72	248.88	301.51	348.33
11½	104.00	121.69	138.23	154.25	203.63	257.44	311.76	360.16
12	107.92	126.05	143.08	159.50	210.57	266.00	322.00	372.00
12½	111.85	130.41	147.93	164.75	217.48	274.55	332.24	383.84
13	115.78	134.77	152.78	170.00	224.40	283.10	342.49	395.67
13½	119.70	139.13	157.63	175.25	231.32	291.65	352.73	407.50
14	123.62	143.49	162.58	180.50	238.23	300.20	362.98	419.33
14½	.....	147.75	167.53	185.75	245.14	308.75	373.22	431.16
15	.....	152.00	172.48	191.00	252.05	317.30	383.47	443.00
15½	.....	156.26	177.43	196.25	258.96	325.85	393.71	454.83

*Sketches above list show thickness at large end of key.
Standard taper of taper keys equals $\frac{3}{16}$ inch per foot.
See table of Standard Keyseats on page 85.
For Straight or Feather Keys use square steel listed on page 83.

M & G SHAFT COLLARS

CAST STEEL



Cut shows "Style A" Solid and Split CAST STEEL SAFETY SHAFT COLLARS

PRICE LIST (Subject to discount)

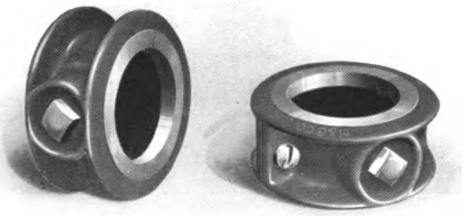
Bore inches	List Price Solid	Split	Bore inches	List Price Solid	Split	Bore inches	List Price Solid	Split	Bore inches	List Price Solid	Split
5/16	$0.62	$0.93	1 1/16	$0.90	$1.35	2	$1.45	$2.18	4 3/16	$4.15	$6.23
3/8	.62	.93	1 1/8	.95	1.43	2 1/16	1.60	2.40	4 1/4	4.70	7.05
7/16	.62	.93	1 3/16	1.00	1.50	2 1/8	1.65	2.48	4 5/16	5.90	8.85
1/2	.62	.93	1 1/4	1.05	1.58	2 3/16	1.80	2.70	5	6.06	9.09
5/8	.62	.93	1 5/16	1.10	1.65	2 1/4	1.88	2.82	5 1/16	6.55	9.83
11/16	.62	.93	1 3/8	1.15	1.73	2 5/16	2.10	3.15	5 1/8	7.20	10.80
1	.65	.98	1 7/16	1.20	1.80	2 3/8	2.40	3.60	5 3/16	8.60	12.90
1 1/16	.70	1.05	1 1/2	1.25	1.88	3 1/16	2.70	4.05	6	8.78	13.17
1 1/8	.75	1.13	1 9/16	1.30	1.95	3 1/8	3.00	4.50			
1 3/16	.80	1.20	1 5/8	1.35	2.03	3 3/16	3.30	4.95			
1 1/4	.85	1.28	1 11/16	1.40	2.10	3 1/4	3.60	5.40			

For table of dimensions see next page.

NOTE—In some of the smaller sizes both Solid and Split (1 3/16" to 2 7/16" incl.) we have a lighter design of somewhat smaller outside dimensions This lighter collar is called "Style B" and is sold from the same list given above, but is subject to a greater discount than the standard or "Style A" collars.

When ordering always specify whether "Style A" or "Style B" collars are wanted and also whether *solid* or *split*.

SOLID



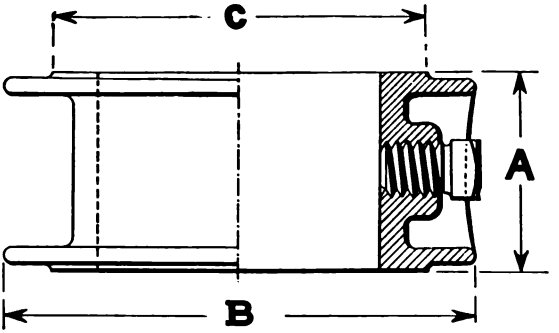
SPLIT

Cut shows "Style B" Cast Steel Safety Shaft Collars.

M & G SHAFT COLLARS (*Continued*)

CAST STEEL

DIMENSION TABLES



Same dimensions whether Solid or Split.
For price list of these collars see opposite page.

ALL DIMENSIONS GIVEN IN INCHES

(The following table applies to Style A only)

Bore Inches	A	B	C		Bore Inches	A	B	C		Bore Inches	A	B	C	
9/16	1 1/4	1 3/4	1 1/4	.....	2	2 1/8	4	2 7/8	.....	3 1/2	2 1/4	6	4 3/4	.....
5/8	1 1/4	1 3/4	1 1/4	.....	2 1/16	2 1/8	4	2 7/8	.....	3 5/8	2 1/4	6	4 3/4	.....
11/16	1 1/4	1 3/4	1 1/4	.....	2 1/8	2 1/8	4	2 7/8	.....	3 11/16	2 1/4	6	4 3/4	.....
3/4	1 1/4	1 3/4	1 1/4	.....	2 3/16	2 1/8	4 1/4	3	.....	3 3/4	2 1/4	6	4 3/4	.....
7/8	1 3/8	2 1/4	1 5/8	.....	2 1/4	2 1/8	4 1/4	3 1/8	.....	3 7/8	2 1/4	6	4 3/4	.....
13/16	1 3/8	2 1/4	1 5/8	.....	2 5/16	2 1/8	4 1/4	3 1/8	.....	3 13/16	2 1/4	6 1/2	5 1/4	.....
1	1 3/8	2 1/4	1 5/8	.....	2 3/8	2 1/8	4 1/2	3 3/8	.....	4	2 1/4	6 1/2	5 1/4	.....
1 1/16	1 3/8	2 1/4	1 5/8	.....	2 7/16	2 1/8	4 1/2	3 3/8	.....	4 3/16	2 1/2	7 1/4	5 3/4	.....
1 1/8	1 1/2	2 3/4	1 7/8	.....	2 1/2	2 1/8	4 1/2	3 3/8	.....	4 1/4	2 1/2	7 1/4	5 3/4	.....
1 3/16	1 1/2	2 3/4	1 7/8	.....	2 9/16	2 1/8	4 1/2	3 3/8	.....	4 7/16	2 1/2	7 1/2	6	.....
1 1/4	1 5/8	2 3/4	1 7/8	.....	2 5/8	2 1/8	4 3/4	3 5/8	.....	4 1/2	2 1/2	7 1/2	6	.....
1 5/16	1 5/8	2 3/4	1 7/8	.....	2 11/16	2 1/8	4 3/4	3 5/8	.....	4 11/16	2 1/2	7 1/2	6	.....
1 3/8	1 3/4	3 1/4	2 1/4	.....	2 3/4	2 1/8	4 3/4	3 3/4	.....	4 13/16	2 5/8	8	6 1/2	.....
1 7/16	1 3/4	3 1/4	2 1/4	.....	2 7/8	2 1/8	4 15/16	3 7/8	.....	5	2 5/8	8	6 1/2	.....
1 1/2	1 3/4	3 1/4	2 1/4	.....	2 13/16	2 1/8	4 15/16	3 7/8	.....	5 1/16	2 5/8	8 1/2	7	.....
1 9/16	1 3/4	3 1/4	2 1/4	.....	3	2 1/8	5	4	.....	5 1/16	2 5/8	8 1/2	7	.....
1 5/8	1 3/4	3 1/2	2 1/2	.....	3 1/8	2 1/8	5	4	.....	5 13/16	3 1/2	12	8 1/2	.....
1 11/16	1 3/4	3 1/2	2 1/2	.....	3 3/16	2 1/4	5 1/2	4 1/2	.....	6	3 1/2	12	.....	.....
1 3/4	1 3/4	3 1/2	2 1/2	.....	3 1/4	2 1/4	5 1/2	4 1/2	.....	6 1/2	3 1/2	12 1/2	9	.....
1 13/16	1 3/4	3 1/2	2 1/2	.....	3 5/16	2 1/4	5 1/2	4 1/2	.....	7	3 1/2	12 1/2	9	.....
1 7/8	2	4	2 7/16	.....	3 3/8	2 1/4	6	4 3/4	.....	.....	.....	.....	.....	.....
1 13/16	2	4	2 7/8	.....	3 7/16	2 1/4	6	4 3/4	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Collars 3 3/16 inches diameter and over have two sets screws.

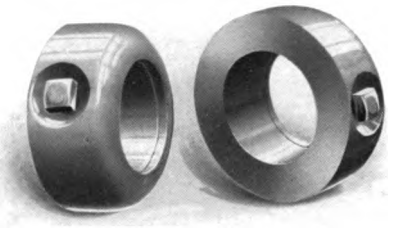
(The following table applies to Style B only)

Bore Inches	A	B	C		Bore Inches	A	B	C		Bore Inches	A	B	C	
1 3/16	1 1/4	2 1/16	1 3/4	.....	1 11/16	1 1/16	2 9/32	2 1/4	.....	2 3/16	1 1/2	3 1/32	2 1/16	.....
1 1/4	.....	.....	.....	.....	1 3/4	.....	.....	.....	.....	2 1/16	1 1/2	3 1/16	3 3/16	.....
1 7/16	1 1/4	2 9/32	2	.....	1 13/16	.....	.....	.....	.....	2 9/16	.....	.....	.....	.....
1 1/2	.....	.....	.....	.....	1 15/16	1 1/2	3 1/4	2 1/2	.....	2 11/16	.....	.....	.....	.....
1 9/16	.....	.....	.....	.....	2	.....	.....	.....	.....	2 13/16	.....	.....	.....	.....

SHAFT COLLARS

"HALLOWELL" COLD ROLLED STEEL (*Patented*)

With Counter Sunk Setscrew



The perfected "Hallowell" Safety Shaft Collar of Cold Rolled Steel is so neat and highly polished that it improves the looks of any piece of machinery.

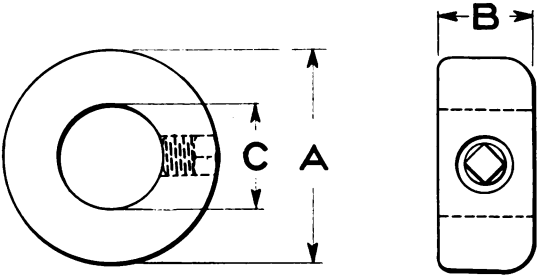
Yet it costs less than common cast iron collars though made of a far superior material.

Made solid in the smaller sizes and of pressed steel in the larger sizes.

It positively won't crack.

And the setscrew can't possibly strip the threads.

The "Hallowell" is safe because setscrew is harmless by not projecting.



MADE SOLID ONLY

PRICE LIST (Subject to discount)

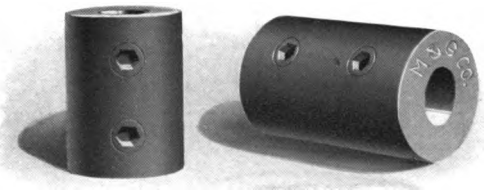
ALL DIMENSIONS GIVEN IN INCHES

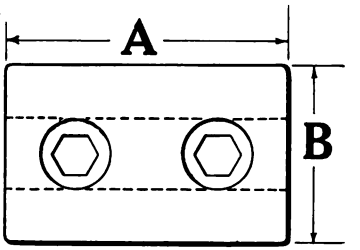
C Bore Inches	Dimensions A Inches	Dimensions B Inches	List Price		C Bore Inches	Dimensions A Inches	Dimensions B Inches	List Price	
3/8	3/4	3/8	$ .22	.....	1 1/16	2 1/16	1 1/8	$1.00	.....
7/16	7/8	7/16	.35	.....	1 1/2	2 1/16	1 1/8	1.05	.....
1/2	1	1/2	.40	.....	1 9/16	2 1/2	1 1/8	1.10	.....
9/16	1	9/16	.46	.....	1 5/8	2 1/2	1 1/8	1.15	.....
5/8	1 1/8	5/8	.46	.....	1 11/16	2 11/16	1 3/16	1.20	.....
11/16	1 1/4	11/16	.50	.....	1 3/4	2 11/16	1 3/16	1.25	.....
3/4	1 1/4	11/16	.50	.....	1 11/16	2 11/16	1 3/16	1.30	.....
11/16	1 3/16	3/4	.60	.....	1 7/8	2 11/16	1 3/16	1.35	.....
7/8	1 5/8	7/8	.60	.....	1 11/16	3 1/16	1 3/8	1.40	.....
11/16	1 5/8	7/8	.62	.....	2	3 1/16	1 3/8	1.45	.....
1	1 5/8	7/8	.65	.....	2 1/16	3 3/16	1 3/8	1.60	.....
1 1/16	1 11/16	11/16	.70	.....	2 1/4	3 3/16	1 3/8	1.65	.....
1 1/8	1 11/16	11/16	.75	.....	2 1/16	3 11/16	1 3/8	1.80	.....
1 3/16	2	1	.80	.....	2 1/2	3 11/16	1 3/8	1.88	.....
1 1/4	2	1	.85	.....	2 11/16	4 1/8	1 3/8	2.10	.....
1 3/16	2 1/16	1	.90	.....	2 3/4	4 1/8	1 3/8	2.17	.....
1 3/8	2 1/16	1	.95	.....					.....
					2 11/16	4 3/16	1 3/8	2.40	.....
					3	4 3/8	1 3/8	2.48	.....

NOTE—Larger sizes are furnished in cast steel collars as shown on page 90.

M & G PLAIN SLEEVE COUPLINGS

Plain Sleeve Shaft Couplings are turned all over and supplied with hollow safety setscrews. They are satisfactory couplings for light work, and moderate speeds.





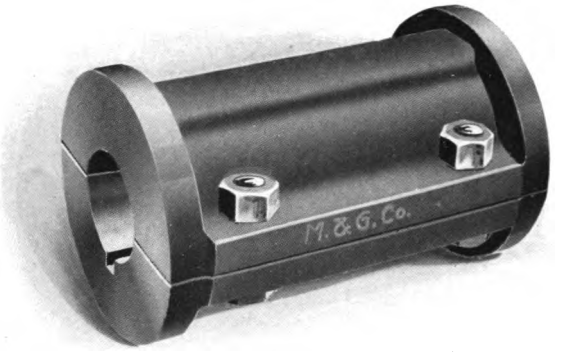
PRICE LIST (Subject to discount)

ALL DIMENSIONS GIVEN IN INCHES

Shaft Diameter inches	Dimensions		Setscrews		List Price	
	A inches	B inches	Quantity	Size		
1/2	2	1 1/4	2	3/8	$2.20	.....
9/16	2	1 1/4	2	3/8	2.20	.....
5/8	2 1/2	1 1/2	2	3/8	2.45	.....
11/16	2 1/2	1 1/2	2	3/8	2.45	.....
3/4	2 3/4	1 3/4	2	3/8	2.70	.....
13/16	2 3/4	1 3/4	2	1/2	2.70	.....
7/8	3 1/4	2 1/4	2	1/2	2.95	.....
15/16	3 1/4	2 1/4	2	1/2	2.95	.....
1	3 1/4	2 1/4	2	1/2	2.95	.....
1 3/16	3 3/4	2 1/2	2	1/2	3.45	.....
1 7/16	4 1/2	3	2	5/8	4.10	.....
1 11/16	5 1/4	3 1/2	4	5/8	4.85	.....
1 15/16	6	4	4	3/4	5.70	.....

NOTE—A wrench to fit the hollow setscrews is furnished with each order.

M & G CLAMP COUPLINGS



M & G Clamp Shaft Couplings provide a simple and efficient means of coupling shafts for ordinary work. They are easy to apply or remove.

The ends and edges of flanges are finished and run true. Price includes straight key with keyway cut to suit in one side of coupling.

PRICE LIST (Subject to discount)

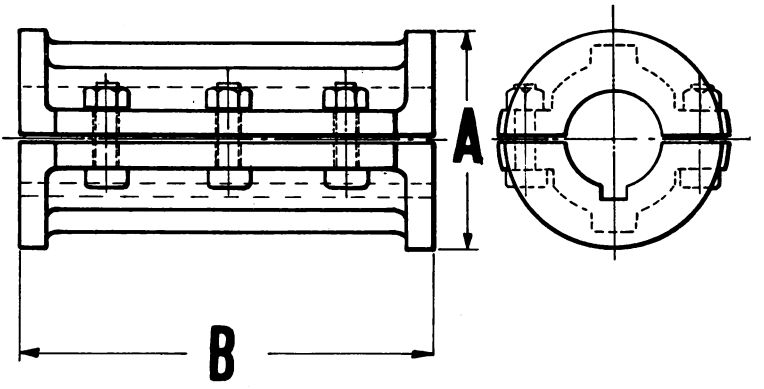
Dia. of Shaft	List Price		Dia. of Shaft	List Price	
	Not fitted	Fitted to Shafts		Not fitted	Fitted to Shafts
$\frac{15}{16}$	$3.15	$4.85	$2\frac{11}{16}$	$10.40	$15.50
$1\frac{3}{16}$	3.65	5.65	$2\frac{15}{16}$	12.50	18.35
$1\frac{7}{16}$	4.30	6.65	$3\frac{3}{16}$	14.95	21.65
$1\frac{11}{16}$	5.15	7.90	$3\frac{7}{16}$	18.00	25.65
$1\frac{15}{16}$	6.10	9.30	$3\frac{11}{16}$	21.80	30.50
$2\frac{3}{16}$	7.30	11.05	$3\frac{15}{16}$	26.40	36.15
$2\frac{7}{16}$	8.70	13.10			

For table of dimensions see next page.

NOTE—When couplings are ordered for different size shafts (reduction couplings) castings have to be made with different size cores and the ends each bored to suit shaft. This extra work is charged extra by a lesser discount being applied to the list price of the largest end.

M & G CLAMP COUPLINGS (*Continued*)

DIMENSION TABLES



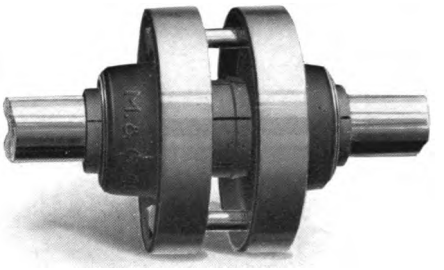
For price list of these couplings see opposite page.

ALL DIMENSIONS GIVEN IN INCHES

Shaft Diameter	A	B	Keyway		
			Width	Depth	
15/16	3	4 1/2	1/4	1/8	
1 3/16	3 1/2	5	5/16	5/32	
1 7/16	4	6	3/8	3/16	
1 11/16	4 1/8	6 1/2	7/16	7/32	
1 15/16	4 1/2	7	1/2	1/4	
2 3/16	4 3/4	8	9/16	9/32	
2 7/16	5 3/8	9 1/2	5/8	5/16	
2 15/16	6 1/2	12	3/4	3/8	
3 7/16	8 1/2	13	7/8	7/16	
3 3/4	9 1/2	14	15/16	15/32	

M & G COMPRESSION FLANGE COUPLINGS

Shown in place on shaft



This Coupling is one of the best and strongest forms ever devised. By drawing the flanges together by means of the bolts, upon the tapered outside of the segmented sleeve, a vise-like grip is secured upon the shaft ends. Straight keys and keyways are furnished in the larger sizes, but no keyways are required in the smaller sizes.

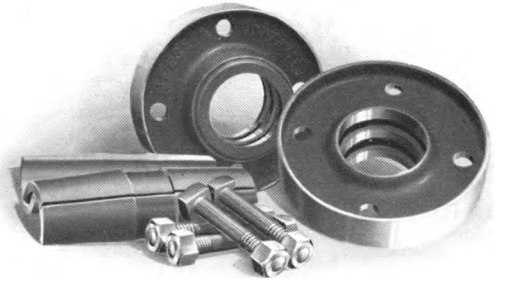
*PRICE LIST (Subject to discount)

Dia. of Shaft	List Price		Dia. Shaft	List Price		Dia. of Shaft	List Price	
	Not Fitted	Fitted to Shaft		Not Fitted	Fitted to Shaft		Not Fitted	Fitted to Shaft
1 3/16	$ 5.50	.....	2 15/16	$16.60	$22.45	4 11/16	$47.75	$60.85
1 7/16	6.40	.....	3 3/16	19.45	26.15	4 15/16	53.40	67.60
1 11/16	7.50	.....	3 7/16	22.70	30.35	5 3/16	60.90	76.20
1 15/16	8.70	.....	3 11/16	26.60	35.30	5 7/16	68.85	85.30
2 3/16	10.20	.....	3 15/16	31.00	40.75	5 11/16	77.20	94.80
2 7/16	12.00	$16.40	4 3/16	36.00	46.90	5 15/16	85.80	104.40
2 11/16	14.10	19.20	4 7/16	41.60	53.65			

For table of dimensions see next page.

*NOTE—For reduction couplings to suit shafts of different diameters a coupling for the largest shaft is used and a bushing supplied for the smaller shaft. The extra cost of the bushing is covered by a lesser discount being applied to the list. (See discount sheet)

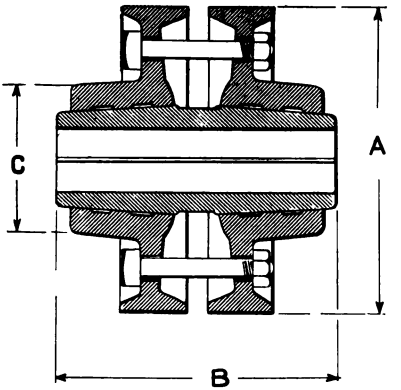
For extra sleeves use one-half of the list price.
For extra flanges, each, use one-quarter of the list price.

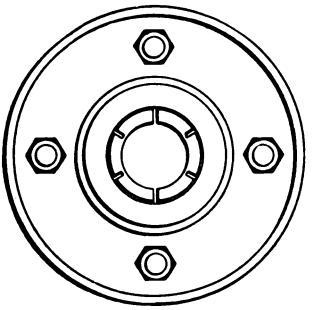


CAN BE QUICKLY APPLIED OR REMOVED

M & G COMPRESSION FLANGE COUPLINGS

DIMENSION TABLES





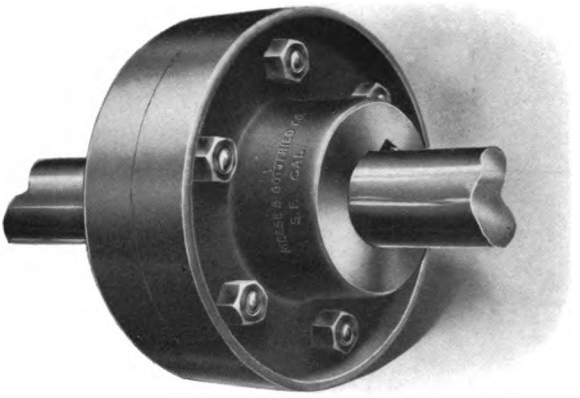
For price list of these couplings see opposite page.

ALL DIMENSIONS GIVEN IN INCHES

Shaft Diameter	A	B	C	Bolts		Keyway		
				Size	No.	W'th	D'th	
1 3/16	6 5/8	6	3	7/16	4	.....	.....	
1 7/16	7 1/8	6 1/2	3 1/4	1/2	4	.....	.....	
1 11/16	7 5/8	7 1/4	3 3/4	1/2	4	.....	.....	
1 15/16	8 1/8	8 1/2	4 1/8	5/8	4	.....	.....	
2 3/16	8 3/4	9	4 1/2	5/8	4	.....	.....	
2 7/16	9 1/4	9 3/4	4 7/8	3/4	4	5/8	3/16	
2 11/16	9 3/4	10 1/4	5 1/4	3/4	4	11/16	3/16	
2 15/16	10 1/2	11	5 3/4	7/8	4	3/4	3/16	
3 3/16	.....	.....	.....	.....	.....	.....	.....	
3 7/16	12	12 1/2	6 3/8	7/8	4	7/8	1/4	
3 11/16	.....	.....	.....	.....	.....	.....	.....	
3 15/16	13 1/2	14 1/4	7	1	4	1	1/4	
4 3/16	.....	.....	.....	.....	.....	.....	.....	
4 7/16	15 1/2	15 3/4	8 1/2	7/8	6	1 1/8	3/8	
4 11/16	.....	.....	.....	.....	.....	.....	.....	
4 15/16	17 1/4	17 1/2	9 5/8	1	6	1 1/4	3/8	
5 3/16	.....	.....	.....	.....	.....	.....	.....	
5 7/16	19	19	10 1/2	1	6	1 3/8	1/2	
5 11/16	.....	.....	.....	.....	.....	.....	.....	
5 15/16	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	

SPECIAL NOTE—When ordering half couplings to mate with couplings bought before December, 1915, give diameter of bolt circle as some patterns were changed slightly.

M & G BOLTED FLANGE COUPLINGS



M & G Bolted Flange Couplings are the standard for all classes of work and especially for heavy shafting. They are supplied with turned bolts passing through reamed holes and the flanges are carefully faced, turned, bored and keyseated.

When ordered placed on shafts at our works, the flanges are pressed on shafts under hydraulic pressure, firmly keyed in place with taper keys and then faced off to perfect alignment with shafts.

When not fitted to the shafts at our works, plain taper keys are furnished with couplings.

*PRICE LIST (Subject to discount)

Dia. of Shaft	List Price Not Fitted	List Price Fitted to Shafts	Dia. of Shaft	List Price Not Fitted	List Price Fitted to Shafts	Dia. of Shaft	List Price Not Fitted	List Price Fitted to Shafts
1 5/16	$ 6.50	$ 9.55	3 3/16	$25.10	$36.80	5 7/16	$70.40	$100.90
1 3/16	7.50	11.00	3 7/16	28.80	42.10	5 11/16	76.30	109.00
1 7/16	8.70	12.80	3 11/16	33.00	48.20	5 15/16	82.00	116.85
1 11/16	10.20	15.00	3 15/16	37.60	54.80	6 7/16	.....	.....
1 15/16	11.85	17.45	4 3/16	42.60	61.95	6 15/16	.....	.....
2 3/16	13.90	20.40	4 7/16	47.90	69.40	7 7/16	.....	.....
2 7/16	16.20	23.75	4 11/16	53.55	77.35	7 15/16	.....	.....
2 11/16	18.80	27.60	4 15/16	58.30	84.30	....	.....	.....
2 15/16	21.75	31.85	5 3/16	64.30	92.55	....	.....	.....

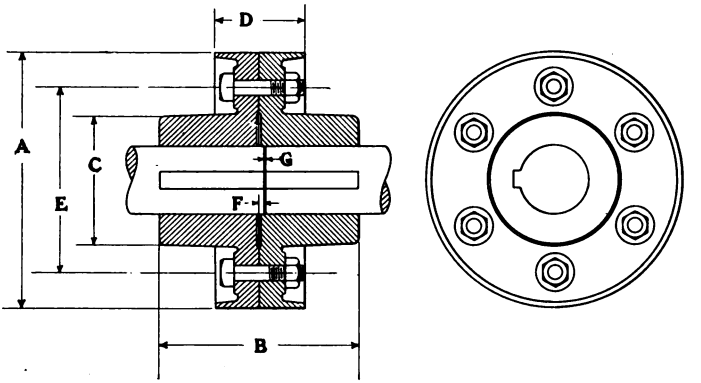
When a coupling is wanted for different size shafts (reduction couplings) the price will be the same as the largest size used plus 10 per cent.

For table of dimensions of bolted flange couplings see next page.

*Read special note at foot of next page.

M & G BOLTED FLANGE COUPLINGS (*Continued*)

DIMENSION TABLES



For price list of these couplings see opposite page.

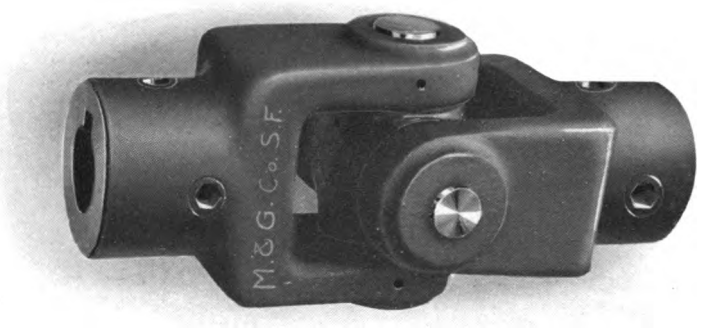
ALL DIMENSIONS GIVEN IN INCHES

Size of Shaft	A	B	C	D	E	F	G	Bolts		
								Dia.	Qty.	
15/16	4 7/8	3	2	1 3/4	3 1/8	3/16	1/16	3/8	4	
1 3/16	5 5/8	3 3/4	2 1/2	2 1/8	3 3/4	3/16	1/16	3/8	4	
1 7/16	6 1/2	4 1/2	3	2 1/2	4 1/2	3/16	1/16	1/2	4	
1 11/16	7 3/8	5 1/4	3 1/2	2 3/4	5 1/8	3/16	1/16	1/2	4	
1 15/16	8 1/4	6	3 7/8	3	5 7/8	3/16	1/16	5/8	4	
2 3/16	9	6 3/4	4 3/8	3 1/8	6 1/2	1/4	1/16	5/8	4	
2 7/16	9 7/8	7 1/2	4 7/8	3 3/8	7 1/4	1/4	1/16	5/8	6	
2 11/16	10 3/4	8 1/4	5 1/4	3 5/8	8	1/4	1/16	5/8	6	
2 15/16	11 5/8	9	5 3/4	3 7/8	8 3/4	1/4	1/16	3/4	6	
3 3/16	12	9 1/4	6 1/8	4	9	1/4	1/16	3/4	6	
3 7/16	12 1/2	9 1/2	6 5/8	4	9 1/4	1/4	1/16	3/4	7	
3 11/16	13	10	7 1/8	4 1/2	9 3/4	1/4	1/16	7/8	6	
3 15/16	13 1/2	10 1/2	7 5/8	4 3/4	10 1/8	1/4	1/16	7/8	7	
4 3/16	14	11	8	4 7/8	10 5/8	1/4	1/8	7/8	8	
4 7/16	14 3/4	11 1/2	8 1/2	5 1/8	11 1/4	1/4	1/8	1	6	
4 11/16	15 3/8	12 1/4	9	5 1/4	11 5/8	1/4	1/8	1	6	
4 15/16	16	12 3/4	9 3/8	5 1/2	12 1/4	1/4	1/8	1	7	
5 7/16	17	14	10 3/8	6	13 1/8	3/8	1/8	1	8	
5 15/16	18 1/4	15	11 1/4	6 1/4	14 1/4	3/8	1/8	1 1/8	6	
6 7/16	19 1/2	16	12 1/8	6 5/8	15 3/8	3/8	1/8	1 1/8	8	
6 15/16	20 1/2	17 1/4	13	7 1/4	16 1/4	3/8	1/8	1 1/4	6	
7 7/16	22	18 1/4	14	7 1/2	17 1/2	3/8	1/8	1 1/4	7	
7 15/16	23	19 1/2	15	8	18 1/4	3/8	1/8	1 3/8	7	

Keyseats in Bolted Flange Couplings are standard taper keyseats as per table on page 85.

SPECIAL NOTE—When ordering half coupiings to match couplings bought before December, 1915, give outside diameter and diameter of bolt circle. Also state whether male or female half is wanted, as the design was slightly changed.

M&G UNIVERSAL JOINT COUPLINGS



STYLE A

CAST IRON UNIVERSAL JOINT SHAFT COUPLING

(See also Style B on page 102)

These Universal Joint Couplings are used for shaft connections where the angle of shafts does not exceed thirty degrees from a straight line; though it is better to keep the angle much less than this if possible.

They work smoothly and silently, and for all moderate speeds will be found superior to bevel gearing.

We offer our patrons the choice of two styles of Universal Joint Couplings—the "Style A" shown on this page being our regular design, the body and pin block are made of cast iron, and the pins of steel.

The hubs are secured to the shafts by means of keys and headless setscrews.

This style of coupling has proven thoroughly reliable in every way.

The other, "Style B" is an all-steel coupling carried in the smaller sizes only. See description on page 102.

PRICE LIST (Subject to discount)
STYLE A

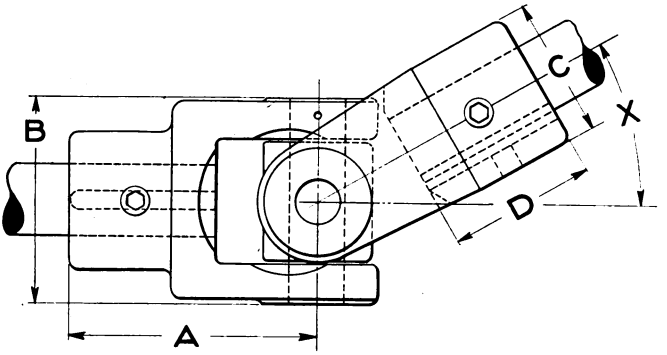
Diameter of Shafts	List Price Bored—Keyseated and Setscrewed	Diameter of Shafts	List Price Bored—Keyseated and Setscrewed
$1\frac{3}{16}$	$13.35	$2\frac{7}{16}$	$26.70
$1\frac{7}{16}$	15.00	$2\frac{15}{16}$	33.35
$1\frac{11}{16}$	16.65	$3\frac{7}{16}$	43.35
$1\frac{15}{16}$	20.00	$3\frac{15}{16}$	60.00
$2\frac{3}{16}$	23.35		

For table of dimensions see next page.

Special couplings to work at greater angles made to order.

M & G UNIVERSAL JOINT COUPLINGS (*Continued*)

DIMENSION TABLES



STYLE A

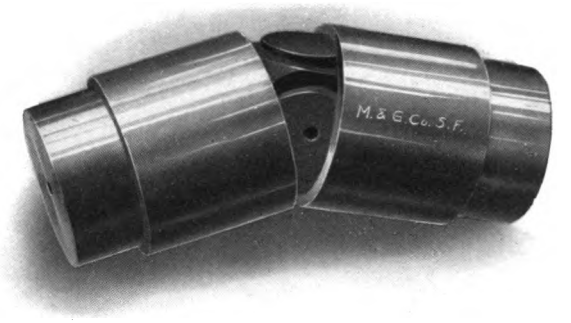
For price list of these couplings see opposite page.

ALL DIMENSIONS GIVEN IN INCHES

	Shaft Dia.	A	B	C	D	Max'm Angle X
FOR STYLE A ONLY	1 3/16	4 1/4	3 5/8	2 3/8	2 1/2	30 degrees
	1 7/16	5 1/2	4 5/8	3	3 1/4	30 "
	1 11/16	6 1/2	5 7/16	3 1/2	3 13/16	30 "
	1 15/16	6 3/4	5 3/4	3 3/4	4	30 "
	2 3/16	7 1/2	6 1/2	4 1/4	4 3/8	30 "
	2 7/16	8 1/2	7 1/4	4 3/4	5	30 "
	2 15/16	10 3/4	8 3/8	5 1/2	6 1/2	30 "
	3 7/16	12 1/2	9 7/8	6 1/2	7 1/2	30 "
	3 15/16	13 1/2	11	7 1/4	8 1/4	30 "

See next page for Style B (Steel) Universal Coupling.

STEEL UNIVERSAL JOINT COUPLINGS



STYLE B

STEEL UNIVERSAL JOINT SHAFT COUPLING

See also Style A on page 100.

This style of Universal Joint Coupling is made entirely of steel with hardened working parts. It possesses superior wearing qualities and the ability to withstand a thrust or tension. When ordered "fitted for shafts" the ends are bored out to fit shafts and supplied with taper pins to hold shafts in position after same are driven in place.

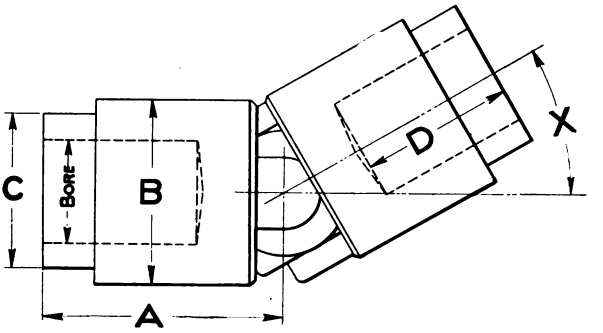
The working angle of these couplings is purposely limited as given in table on next page, as by so doing, the parts which take the twisting strain are supported just so much nearer the center of joint and chance for wear and unnecessary strains which might be caused by running at too great an angle, if unlimited, is reduced. Forty-five degrees is as much as can be expected of any Universal Joint to run at and not over 25 or 30 degrees should be used where a greater angle can be avoided. The smaller the angle at which they are run the longer they will wear and less power they will absorb.

PRICE LIST (Subject to discount)
STYLE B

Maximum Diameter of Shafts	List Price Not Bored for Shafts	List Price Bored for Shafts
5/16	$ 2.25	$ 3.10
7/16	2.50	3.65
9/16	2.75	4.25
13/16	3.20	5.00
15/16	3.70	5.80
1 1/16	4.25	6.60
1 1/4	5.00	7.95
1 11/16	10.00	13.55

STEEL UNIVERSAL JOINT COUPLINGS (*Continued*)

DIMENSION TABLES



STYLE B

For price list of these couplings see opposite page.

ALL DIMENSIONS GIVEN IN INCHES

FOR STYLE B ONLY	*Max. Shaft Dia.	A	** B	** C	D	Max'm Angle X
	5/16	1 1/4	9/16	1/2	3/4	45 degrees
	7/16	1 1/8	7/8	3/4	5/8	45 "
	5/8	1 1/2	1 1/8	1	7/8	45 "
	13/16	1 7/8	1 3/8	1 1/4	1 1/8	45 "
	13/16	2 1/4	1 11/16	1 1/2	1 3/8	45 "
	1 1/16	2 5/8	1 13/16	1 3/4	1 5/8	45 "
	1 1/4	3	2 1/4	2	1 7/8	30 "
	1 11/16	3 3/4	3	2 1/2	2 3/8	30 "

*Unless ordered fitted for shafts, the ends of couplings are not bored.

**The dimensions B and C are usually unimportant and are therefore approximate only.

A FEW USES TO WHICH THESE COUPLINGS ARE PUT

Used on adjustable gang drills and wood-boring machines.

On the moving feed shafts of milling, grinding, boring and various special machines.

For driving self-aligning boring bars.

For operating mechanisms, for revolving ventilating funnels on steamships.

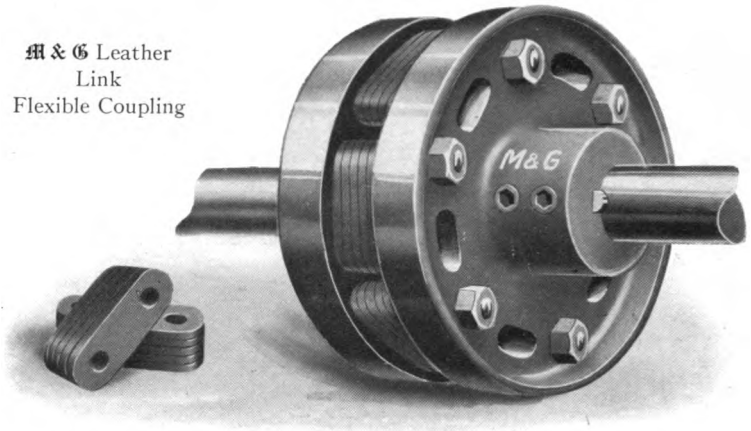
For adjusting mechanisms of gun carriages.

On printing presses and various paper handling machinery.

On motor boats for connecting engine shaft to propeller shaft, and a multitude of other purposes.

M & G FLEXIBLE COUPLINGS
LEATHER LINK TYPE

M & G Leather Link Flexible Coupling



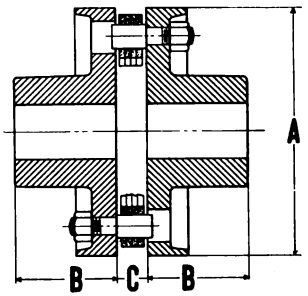
These couplings allow of considerable displacement from true alignment of shafts and are very smooth in action.

They effectually insulate the ends of shaft from each other which is an important feature in some cases.

Shafts may be disconnected if desired by removing the studs from the discs through the slots in the opposite disc.

Solid leather links are used as pictured above—these links are much stronger than the "wrapped" open links formerly used.

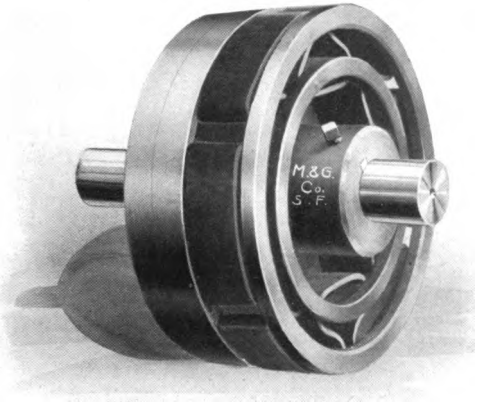
NOTE—When Flexible Couplings are wanted for reversing shafts, offset pins and open links are supplied, which alters the price and H. P. rating given.



PRICE LIST (Subject to discount)

Outside Dia. A Inches	Max. Bore Inches	H.P. Per 100 R.P.M.	Will transmit power of shaft	Hub Length B Inches	Space between shafts C Inches	Leather Links No.	Leather Links Width	Leather Links Thickness	Max. Revs. per Min.	List Price complete	Extra Links per set
5	1 1/16	1/2	3/4	1 5/8	1 1/16	3	1 3/8	3/16	3500	$14.00	$2.00
6	1 1/16	1	7/8	1 3/4	"	3	1 1/2	"	3100	16.00	2.00
7	1 1/16	1 1/2	1	2	7/8	3	1 3/4	3/4	2700	18.00	3.40
8	2	2 1/3	1 1/8	2 1/4	"	4	"	"	2300	21.00	4.40
9	2 1/2	2 1/2	1 1/4	2 1/2	3/4	4	1 7/8	3/16	2000	24.00	3.40
	2 1/2	3	1 3/8	"	7/8	4	"	3/4	2000	26.00	4.40
10	3	4	1 7/8	3	1 1/16	4	2 1/8	"	1800	30.00	4.80
	3	5 1/2	1 5/8	"	1 1/4	4	"	1	1800	33.00	6.20
12	3 1/2	6	1 11/16	3 1/2	"	4	2 1/4	1	1400	46.00	6.20
	3 1/2	7 1/2	1 3/4	"	1 1/16	4	"	1 1/4	1400	50.00	7.80
15	4	10	1 11/16	4 1/4	1 3/16	5	2 1/2	1	1100	72.00	9.60
	4	15	2 1/4	"	1 11/16	5	"	1 1/2	1100	80.00	14.10
18	5	20	2 7/16	5	1 1/2	5	2 3/4	1 1/4	900	104.00	15.30
	5	24	2 5/8	"	1 3/4	5	"	1 1/2	900	104.00	18.40
	5	28	2 11/16	"	2	5	"	1 3/4	900	120.00	21.60
	5	32	2 1/8	"	2 1/4	5	"	2	900	120.00	24.60
24	6	40	3 1/8	6	1 5/8	6	3 1/4	1 1/4	700	188.00	18.50
	6	48	3 3/16	"	1 7/8	6	"	1 1/2	700	188.00	22.30
	6	56	3 1/4	"	2 1/8	6	"	1 3/4	700	194.00	26.00
	6	64	3 5/8	"	2 3/8	6	"	2	700	206.00	29.70
	6	80	3 11/16	"	2 7/8	6	"	2 1/2	700	220.00	37.30
30	7	100	4 1/4	8	2 3/8	6	4 1/4	2	550	.....	.....
	7	125	4 1/2	"	2 7/8	6	"	2 1/2	550	.....	.....
	7	150	4 7/8	"	3 3/8	6	"	3	550	.....	.....
	7	187	5 1/4	"	4 1/8	6	"	3 3/4	550	.....	.....

M & G FLEXIBLE COUPLINGS
LEATHER BAND TYPE

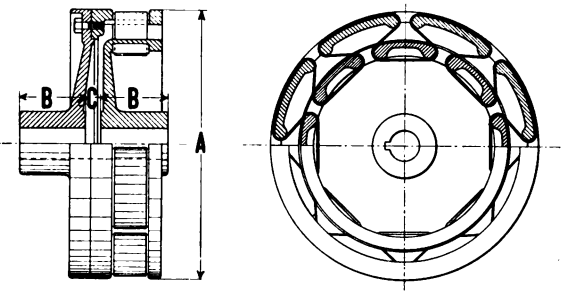


M & G Leather Band Flexible Coupling

In this style of flexible coupling the separate leather links are dispensed with and an endless leather band is used. The band passes in and out of the cast lugs as shown and the ends are cemented together as with an endless leather belt.

This coupling is made of three parts as shown in the sketch below, and may be disconnected by removing the cap screws which secure the outer ring in position.

If it is desired to run with the coupling disconnected, the member to which the outer ring is attached should be mounted on the driving shaft so that the ring when disconnected may be supported by the dead shaft.

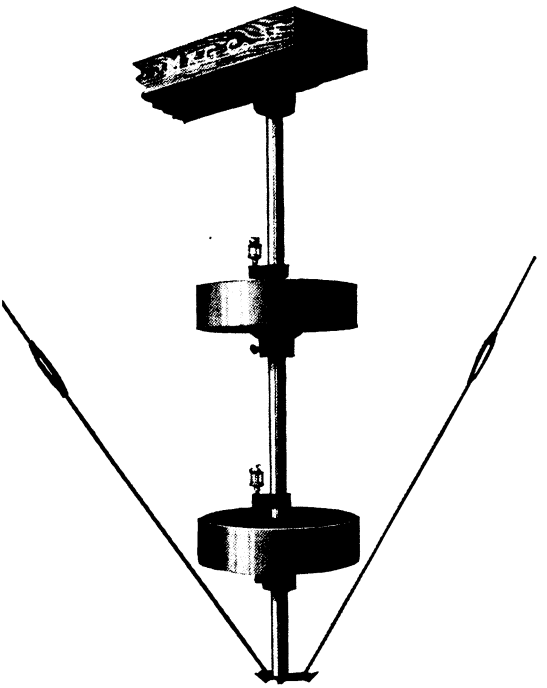


PRICE LIST (Subject to discount)

Outside diameter A inches	Maximum size shaft	Horse power per 100 R.P.M.	Will transmit power of shaft	Hub length B inches	Space between shafts C inches	Leather Belt			List price complete	
						Width inches	Thickness inches	Length inches		
8	1 11/16	1 3/4	1 3/16	2 1/4	3/4	.....	.....	.....	$25.50	.....
12	2 11/16	6	1 11/16	3	13/16	.....	.....	.....	37.50	.....
16	4 1/16	13 3/4	2 3/16	4 1/4	13/16	.....	.....	.....	52.00	.....
20	5 1/16	30	2 11/16	5	13/16	.....	.....	.....	71.00	.....
24	7 7/16	70	3 11/16	6	1 3/16	.....	.....	.....	103.00	.....

See also leather link coupling on opposite page.

M & G PLAIN MULE STANDS



The illustration above shows our plain or rigid Mule Stand equipped with M & G Steel Rim Whole Pulleys, brass bushed and supplied with oil cups.

This stand is used for changing direction of belts to connect pulleys running at angles with each other, where they are on the same level and of the same diameters; for other conditions use the stand described on page 108.

Price includes complete stand as shown in the cut above, pulleys, oil cups and guy rods with turn buckles, etc.

Shafts ordered in excess of lengths given in table on next page will be charged extra.

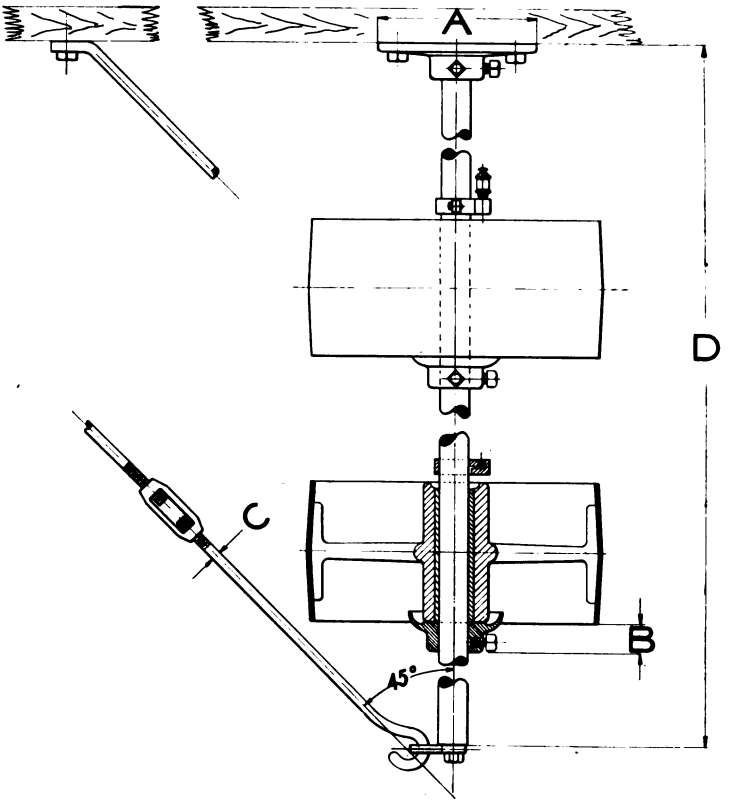
PRICE LIST (Subject to discount)

No.	Diameter of Shaft	2-Pulleys, Inches	List Price
1	$1\frac{11}{16}$	16x 4	$25.00
2	$1\frac{15}{16}$	18x 6	40.00
3	$2\frac{3}{16}$	20x 8	60.00
4	$2\frac{7}{16}$	24x12	85.00
5	$2\frac{15}{16}$	30x14	110.00

For table of dimensions see next page.

M & G PLAIN MULE STANDS (*Continued*)

DIMENSION TABLES



PLAIN MULE STANDS

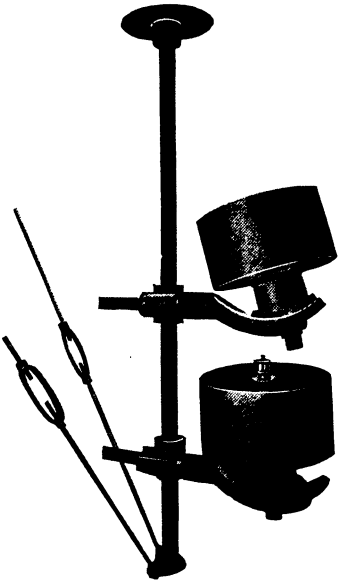
Include 2 cup collars, 2 braces, 2 pulleys, 2 oil collars, 2 oil cups, 1 shaft, 1 c. i. flange and one brace plate.

For price list see preceding page.

ALL DIMENSIONS GIVEN IN INCHES

No.	Dia. of Shaft	Two Pulleys	A	B	C	D	Bolts		
							Size	No.	
1	$1\frac{11}{16}$	16x 4	10	$2\frac{3}{4}$	$\frac{1}{2}$	42	$\frac{1}{2}$	6	
2	$1\frac{15}{16}$	18x 6	11	$2\frac{3}{4}$	$\frac{1}{2}$	48	$\frac{5}{8}$	6	
3	$2\frac{3}{16}$	20x 8	12	$2\frac{3}{4}$	$\frac{5}{8}$	57	$\frac{5}{8}$	6	
4	$2\frac{7}{16}$	24x12	14	$2\frac{3}{4}$	$\frac{3}{4}$	66	$\frac{3}{4}$	6	
5	$2\frac{15}{16}$	30x14	16	3	$\frac{3}{4}$	75	$\frac{3}{4}$	6	

M & G ADJUSTABLE MULE STANDS



The Mule Stand illustrated and listed on this page is our adjustable type and the pulleys can be swiveled or turned and then held rigidly, in any position, making it possible to belt pulleys together when of different diameters and running at angles with each other in different planes.

This stand is used where the conditions cannot be met by the plain mule stand shown on page 106.

Mule Stands may be fitted with manila rope sheaves if desired.

Price includes complete stand as shown in the cut above, two M & G Steel Rim Whole Pulleys brass bushed, oil cups, guy rods with turnbuckles, etc.

When shafts are ordered longer than lengths given in table on next page, the increased length will be charged for.

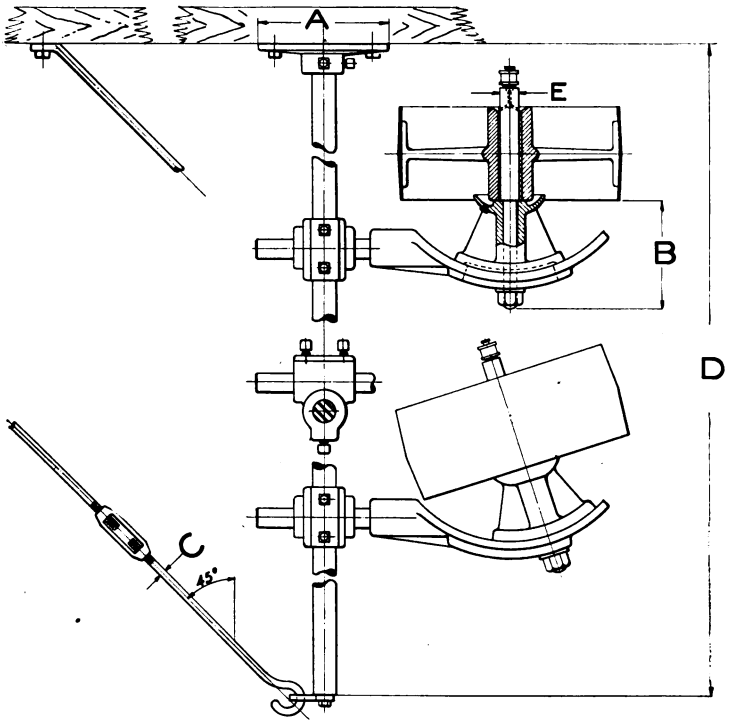
PRICE LIST (Subject to discount)

No.	Diameter of Shaft	2-Pulleys, Inches	List Price
1	$1\frac{15}{16}$	12x 6	$45.00
2	$2\frac{3}{16}$	16x 9	57.50
3	$2\frac{7}{16}$	24x10	85.00
4	$2\frac{15}{16}$	28x12	120.00
5	$2\frac{15}{16}$	32x14	145.00

For table of dimensions see next page.

M&G ADJUSTABLE MULE STANDS (*Continued*)

DIMENSION TABLES



For price list see preceding page.

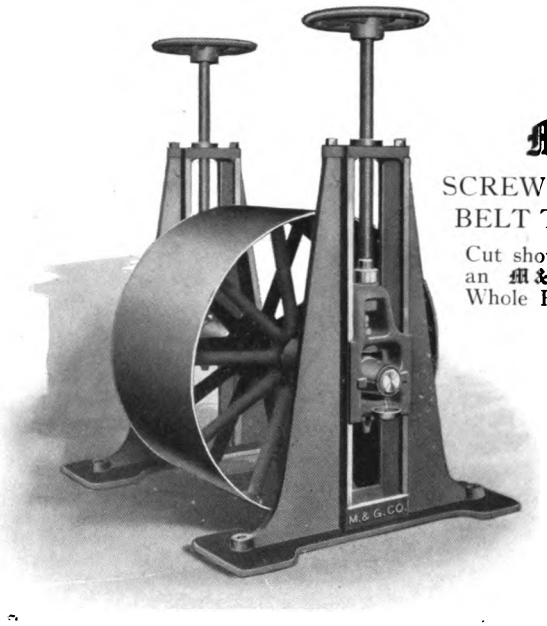
ALL DIMENSIONS GIVEN IN INCHES

No.	Dia. of Shaft	Two Pulleys	A	B	C	D	E Pulley Shaft	Bolts	
								Size	No.
1	1 15/16	12x 6	10	6 3/4	1/2	60	1 7/16	1/2	6
2	2 3/16	16x 9	12	8 1/2	5/8	72	1 11/16	5/8	6
3	2 7/16	24x10	14	11 1/2	3/4	84	1 15/16	3/4	6
4	2 15/16	28x12	16	12 1/2	3/4	84	2 7/16	3/4	6
5	2 15/16	32x14	18	13 1/2	3/4	96	2 15/16	7/8	6

BELT TIGHTENERS

On the following twelve pages we illustrate various styles of Belt Tighteners, and several sizes in each style, thus allowing customers to select the one best suited to their particular requirements.

Belt Tighteners to meet special conditions will be made to order.



M & G

SCREW ADJUSTING BELT TIGHTENER

Cut shows it fitted with an M & G Steel Rim Whole Pulley.

This form of Belt Tightener is most suitable for horizontal belts and heavy service.

It is fitted with babbitted ring-oiling bearings and it may be placed as shown in the cut or suspended with handwheels down.

We have three sizes of frames; the largest will take pulleys up to and including 44 inches in diameter by 38 inches face, though the frames may be fitted with any smaller size pulley than the maximum listed below.

Price does not include pulley. Select any pulley in our list within the capacity of the frame desired, and add its price to price of Tightener given below.

PRICE LIST (Subject to discount)

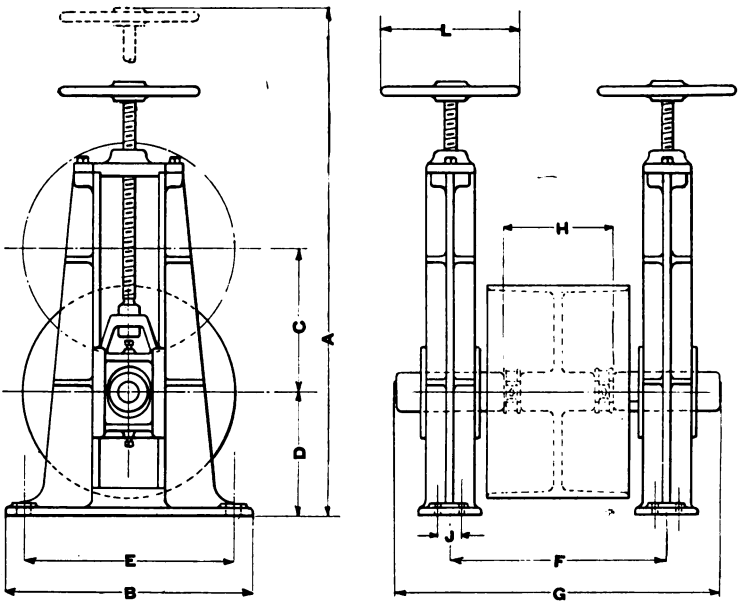
No.	Shaft	Travel	Maximum Pulley	Price
1	$1\frac{15}{16}$	16 inches	18 in. dia. by 12 in. face	$ 85.00
2	*$2\frac{15}{16}$	27 "	36 " " " 24 " "	115.00
3	$3\frac{7}{16}$	39 "	44 " " " 38 " "	175.00

For table of dimensions see next page.

*With narrow faced pulleys a $2\frac{7}{16}$ inch shaft is used.

M & G SCREW ADJUSTING BELT TIGHTENERS

DIMENSION TABLES



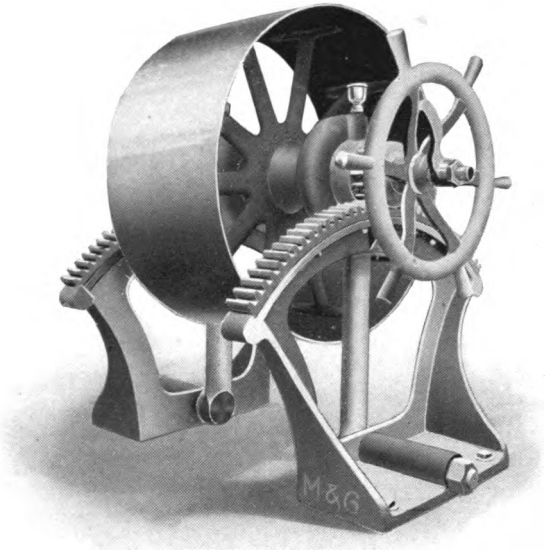
For price list of this Belt Tightener see opposite page.

ALL DIMENSIONS GIVEN IN INCHES

No.	Maximum Pulley	Shaft	A	B	C	D	E	F	G	H	L	J	Bolts No.	Bolts Size
1	18x12	1 11/16	52	21	16	5½	18½	18	32	9	12		2	1
*2	36x24	2 3/16	78	30	24	10	26½	33	45	21	14	4½	4	1
3	44x38	3 7/16	106	36	39	11	32	52	60	36	17½	8	4	1⅛

*On the No. 2 Tightener a 2 7/16 inch shaft is used for narrow face pulleys.

BELT TIGHTENERS (*Continued*)



M & G "PERFECTION" BELT TIGHTENER

Cut shows it fitted with an M & G Steel Rim Whole Pulley.

Our "Perfection" Belt Tightener illustrated above was especially designed for heavy, vertical belts.

It travels in an arc thrown from lower pivot and has two cast iron racks formed to the same curve.

It will work either to the right or left and can be locked at any position by simply turning the clamping handle shown in front of hand wheel.

The bearing is on a sleeve full length of pulley face—fitted with grease cups and provided with anti-drip pockets.

At present we have but one size, which was designed to take a pulley up to, and including, 36 inches diameter by 24 inches face, though it may be fitted with any smaller diameter or narrower face pulley if desired.

Price does not include pulley. Select any suitable pulley in our list and add its price to price of tightener given below.

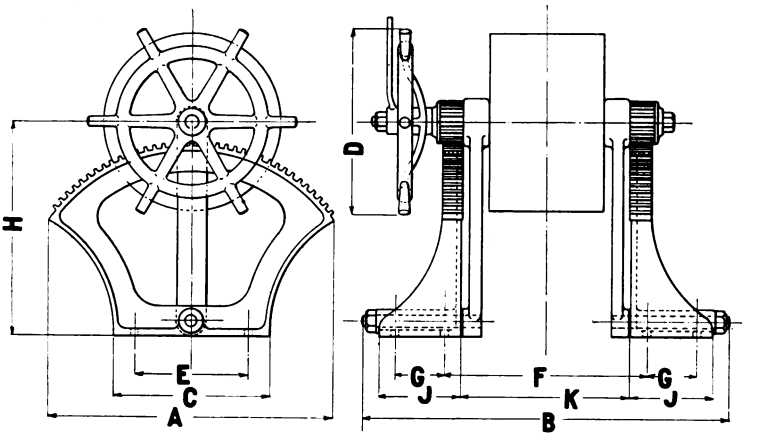
PRICE LIST (Subject to discount)

Number		Travel	Maximum Pulley	Price
1	.....	.....	.....	.....
2	.....	24 inch	36 in. dia. by 24 in. face	$99.00
3	.....	.....	.....	.....

For table of dimensions see next page.

M & G PERFECTION BELT TIGHTENERS

DIMENSION TABLES



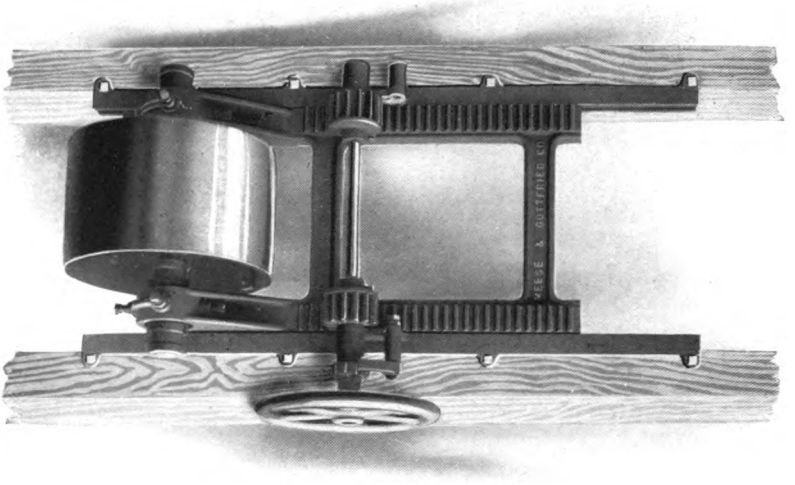
For price list of these Belt Tighteners see opposite page.

ALL DIMENSIONS GIVEN IN INCHES

No.	Max'm Pulley		Shaft	Bolts		A	B	C	D	E	F	G	H	J	K	
	Dia.	Face		No.	Size											
1	18	12	$1\frac{7}{16}$	8	$\frac{3}{4}$	32	52	18	24	14	34	$5\frac{1}{2}$	$25\frac{3}{4}$	9	30	
2	36	24														
3	44	38														

The above dimensions are for the maximum width pulley, though any smaller pulley can be used.

BELT TIGHTENERS (*Continued*)



M & G RACK AND PINION BELT TIGHTENER

Cut shows it fitted with an M & G Steel Rim Whole Pulley.

On this page we list our Rack and Pinion type of Belt Tightener. This will be found to be a powerful, quickly-operated piece of mechanism.

It can be bolted to two timbers, and may be placed to work in any position.

The handwheel shaft is supplied with a ratchet wheel and pawl to firmly lock the pulley at any tension. Bearings are babbitted ring-oiling.

We make this tightener in three different sizes of frame, which will take maximum pulleys listed below or which can be fitted with any smaller size pulley if desired.

Price does not include pulley. Select any pulley in our list within the capacity of the frame desired and add its price to price of Tightener given below.

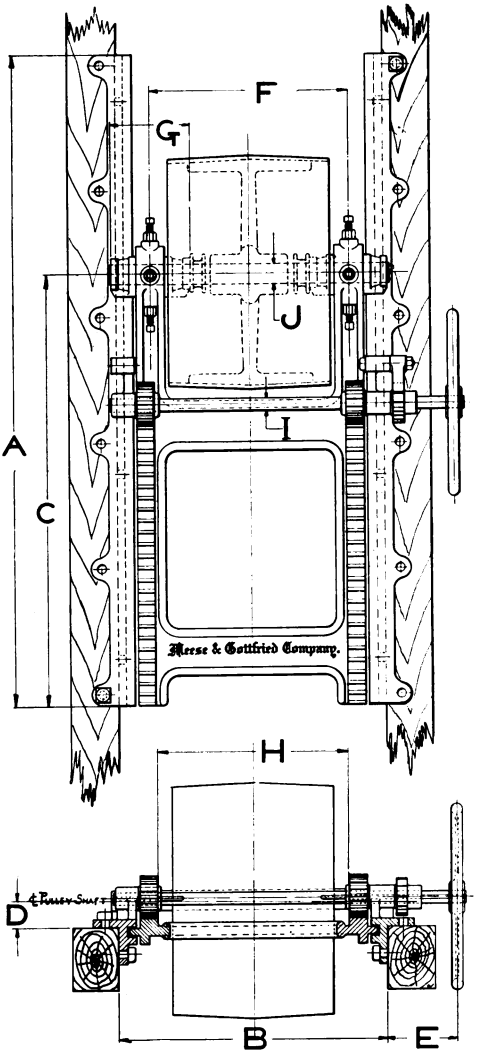
PRICE LIST (Subject to discount)

Number	Shaft	Travel	Maximum Pulley	Price
1	$1\frac{11}{16}$	20 inches	14 in. dia. by 9 in. face.....	$42.00
2	$1\frac{15}{16}$	24 inches	24 in. dia. by 15 in. face.....	53.00
3	$2\frac{7}{16}$	36 inches	30 in. dia. by 21 in. face.....	127.00

For table of dimensions see next page.

M & G RACK AND PINION BELT TIGHTENERS

DIMENSION TABLES

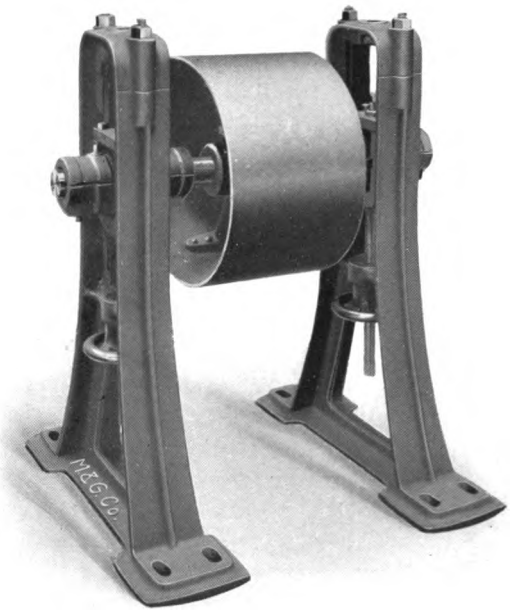


For price list of these Belt Tighteners see opposite page.

ALL DIMENSIONS GIVEN IN INCHES

No.	A	B	C	D	E	F	G	H	Shafts I	Shafts J	Maximum Pulley	Travel
1	48	20¼	29	3¼	7½	14¾	8¼	14¼	1	1 11/16	14x 9	20
2	60	25¼	40½	3 3/8	7½	19¼	9	17½	1 3/16	1 11/16	24x15	24
3	84	34½	55½	3¾	9¾	26	10⅛	25	1 7/16	2 1/16	30x21	36

BELT TIGHTENERS—(*Continued*)



M & G HANGER STYLE BELT TIGHTENER

Cut shows it fitted with an M & G Steel Rim Whole Pulley

This style of Belt Tightener was designed to fulfill certain conditions not exactly met by the tighteners already described.

It is similar to the screw belt tightener shown on page 110, though not quite so heavy.

The bearings are babbitted ring-oiling and have long screw adjustment operated by means of the handwheels shown in the cut.

Bearings are pivoted in the adjusting yokes to prevent binding in case both sides are not adjusted equally.

It is chiefly used for horizontal belts and may be suspended from the ceiling or placed on the floor in the position shown in the above cut.

Price does not include pulley—select any pulley in our list within the capacity of the tightener desired and add its price to price of tightener given below.

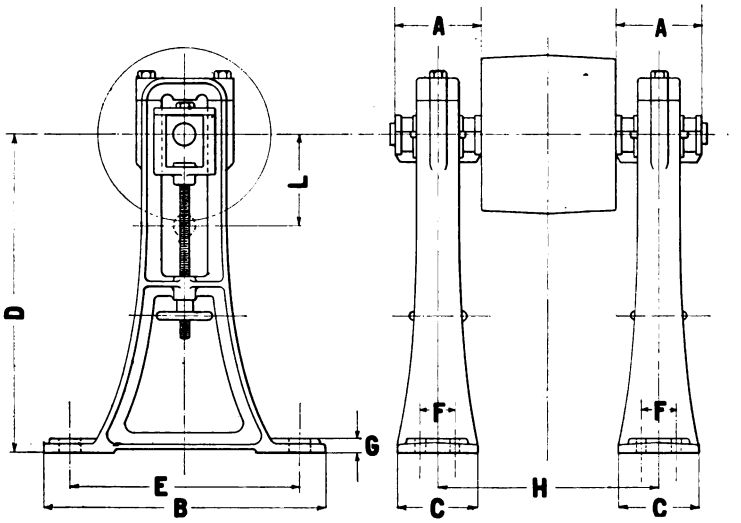
PRICE LIST (Subject to discount)

Number	Shaft Dia.	Travel inches	Maximum Pulley	Price
1	$1\frac{7}{16}$	8	12 in. dia. by 8 in. face.. ..	$40.00
2	$1\frac{15}{16}$	10	15 in. dia. by 12 in. face....	60.00
3	$2\frac{7}{16}$	12	22 in. dia. by 18 in. face....	100.00

For table of dimensions see next page.

M & G HANGER STYLE BELT TIGHTENERS

DIMENSION TABLES



For price list of these Belt Tighteners see opposite page.

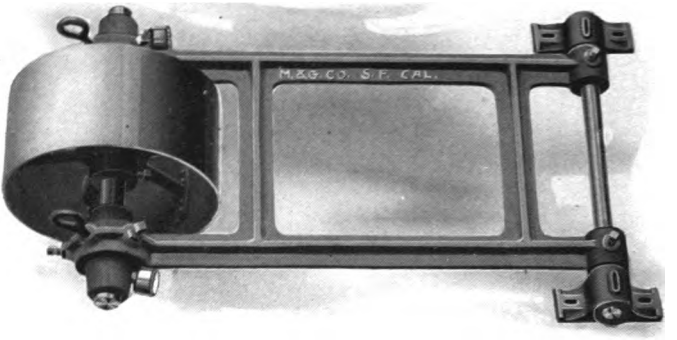
ALL DIMENSIONS GIVEN IN INCHES

Number	Max. Pulley		Bolts		Shaft	A	B	C
	Dia.	Face	No.	Size	Dia.			
1	12	8	2	1	$1\frac{7}{16}$	$7\frac{1}{2}$	22	6
2	15	12	4	1	$1\frac{15}{16}$	9	27	$7\frac{1}{2}$
3	22	18	4	$1\frac{1}{4}$	$2\frac{7}{16}$	10	39	$9\frac{1}{2}$

Table continued

Number	D	E	F	G	H	Take up L	Frame No.	
1	24	$18\frac{3}{4}$	.....	$1\frac{1}{4}$	16	8	$2\frac{1}{4}$x24	.....
2	30	22	$3\frac{3}{4}$	$1\frac{1}{4}$	21	10	3 x30	.....
3	36	34	6	$1\frac{1}{2}$	28	12	$3\frac{3}{4}$x36	.....

BELT TIGHTENERS (*Continued*)



M & G PLAIN SWING BELT TIGHTENER

Shown equipped with an M & G Steel Rim Whole Pulley

This Belt Tightener is the well-known "Swinging Frame" style.

It is simple, effective and can be applied in almost any position. In most cases the combined weight of frame and pulley acting by gravity alone is sufficient to produce proper tension on belt, but at some angles of application, it may be desirable to use additional weight, which can readily be done either by attaching to frame or by means of ropes attached to eyebolts on frame--the ropes to be passed over idler sheaves and supplied with proper weights.

Pulley Bearings are babbitted and supplied with grease cups—the bearings can be turned around and secured in any position so as to admit of grease cups being placed at any angle.

This Belt Tightener is made in four sizes, each suitable for the maximum size pulley listed below, although the frames may be ordered with any smaller size pulley desired.

Price does not include pulley. Select any pulley from our list within the capacity of the frame wanted and add its price to price of Tightener given below.

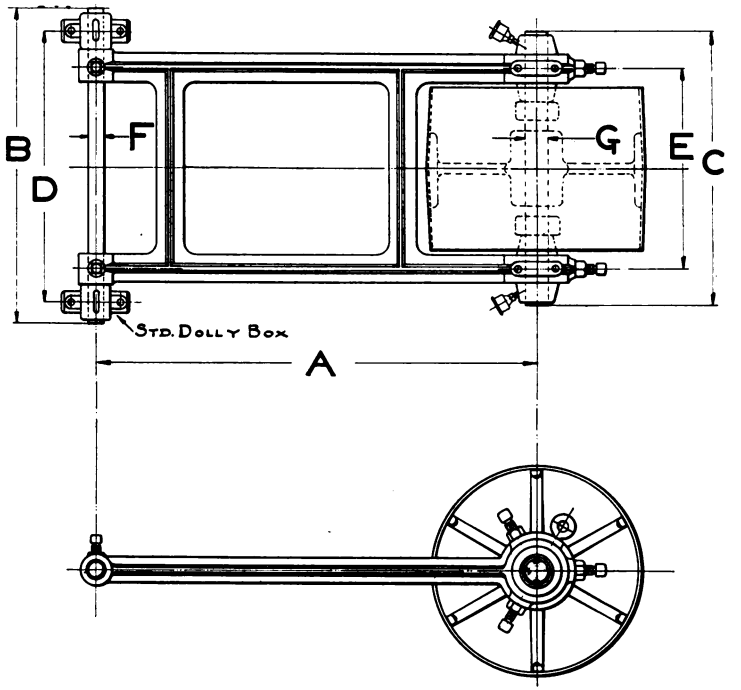
PRICE LIST (Includes Dolly Boxes)—Subject to discount

Number	Diameter of Pulley Shaft	Maximum Pulley	Price
0	$1\frac{7}{16}$	14 inches dia. by 5 in. face.....	$24.00
1	$1\frac{7}{16}$	12 in. dia. by 8 in. face.....	29.00
2	$1\frac{15}{16}$	16 in. dia. by 12 in. face.....	35.00
3	$2\frac{7}{16}$	24 in. dia. by 18 in. face.....	45.00

For table of dimensions see next page.

M & G PLAIN SWING BELT TIGHTENER

DIMENSION TABLES

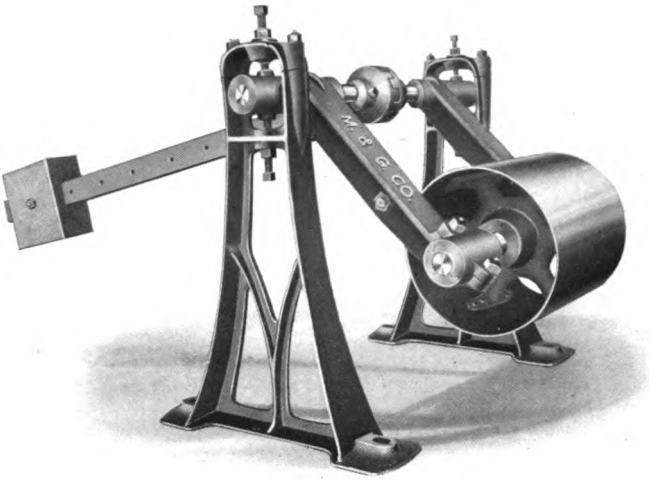


For price list of these Belt Tighteners see opposite page.

ALL DIMENSIONS GIVEN IN INCHES

Number	A	B	C	D	E	Shafts		Maximum Pulley	
						F	G		
0	18	17½	13½	14	8½	$1\frac{3}{16}$	$1\frac{7}{16}$	14 x 5	
1	24	20	17	17	11	$1\frac{3}{16}$	$1\frac{7}{16}$	12 x 8	
2	36	25½	22	22	15½	$1\frac{7}{16}$	$1\frac{15}{16}$	16 x 12	
3	48	34	30	29½	22	$1\frac{11}{16}$	$2\frac{7}{16}$	24 x 18	

BELT TIGHTENERS (*Continued*)



M & G COUNTER-WEIGHTED BELT TIGHTENER

Cut shows it equipped with an M & G Steel Rim Whole Pulley.

This style of Belt Tightener is counterweighted to produce proper pressure against the belt and the weight can be adjusted along the lever to secure any desired tension.

The lever bar can be set at any angle on the shaft, either in back or in front of the pulley, thus permitting tightener to be used on belts running in any plane whatsoever.

The tightener can either be suspended, or supported from below on hangers (as shown in cut), or dolly boxes can be used, this feature depending on the particular conditions involved.

The frames are made in three sizes, each to take maximum pulley as listed below, but they may be fitted with smaller pulleys if desired.

Prices given below include a pair of shaft hangers, but not the pulley. Select any pulley in our list within the capacity of tightener desired and add its price to that of tightener given below.

PRICE LIST (Subject to discount)

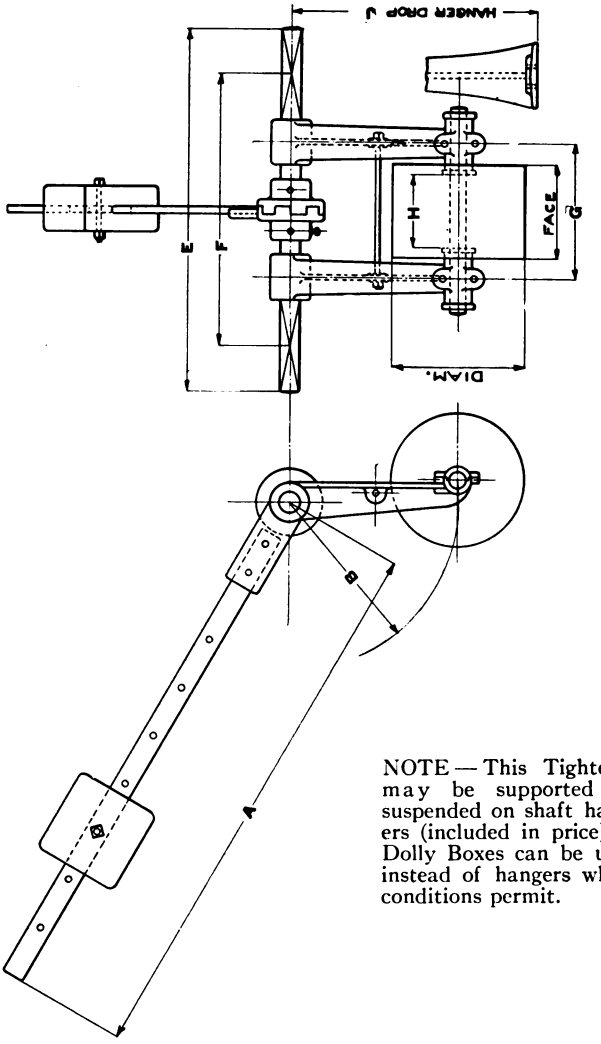
Number	Pulley Shaft Dia.	Hangers to center of shaft	Maximum Pulley	Price
1	$1\frac{7}{16}$	22 inches	12 in. dia. by 8 in. face.....	$35.00
2	$1\frac{15}{16}$	26 inches	15 in. dia. by 12 in. face....	50.00
3	$2\frac{7}{16}$	36 inches	22 in. dia. by 18 in. face....	70.00

For table of dimensions see next page.

M & G COUNTER-WEIGHTED BELT TIGHTENERS

DIMENSION TABLES

For price list of these Belt Tighteners see opposite page.

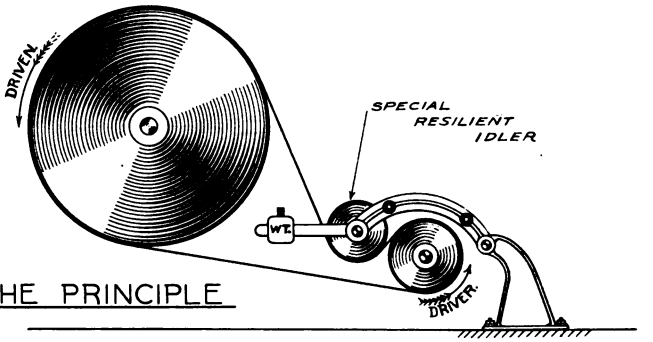


NOTE — This Tightener may be supported or suspended on shaft hangers (included in price) or Dolly Boxes can be used instead of hangers where conditions permit.

ALL DIMENSIONS GIVEN IN INCHES

No.	A	B	Max. Pulley		E	F	G	H	Shafts		J
			Dia.	Face					Upper	Lower	
1	48	15	12	8	32	24	12	6½	1 11/16	1 7/16	22
2	60	18	15	12	38½	30	17	10	2 7/16	1 11/16	26
3	72	24½	22	18	47	38	24	16	2 11/16	2 7/16	36

M & G "*SHORTCENTER*" Belt Drive



THE PRINCIPLE

M & G *Shortcenter* Belt Drives are the result of a gradual development in the application of idlers in belt driving.

This subject has been given a great deal of attention of recent years, especially in Europe, where the combined features of the system as generally adopted are known under names such as "Lenix" drives, etc., and our design, embodying the result of experience to date with these drives and the knowledge gained by the study of thousands of belt drives of all kinds, has been named the **M & G** *Shortcenter* Belt Drive.

As shown in the diagram above, it consists principally of the proper application of a specially designed resilient idler pulley, and while the use of idler pulleys under spring pressure, swinging belt tighteners, etc., is not new, the former having been used for many years as an attachment on motors—the study of the underlying principles and scientific application is new, as it has been found possible to install shortcenter belt drives in many cases where formerly high speed chain drives were always used.

Speed ratios such as 1 to 6, 1 to 7, 1 to 8 with very short centers are common and even higher ratios as 1 to 10, etc., are quite possible.

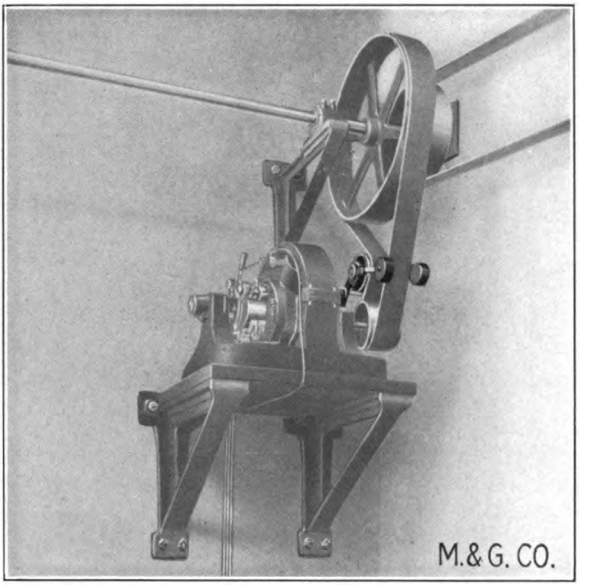
The power obtainable with a given width of belt is also considerably higher than for ordinary drives—sometimes as much as 100 per cent greater.

Permanency of the installations is all that can be desired, as a correctly designed drive will run for years with no attention, save oiling, and is not to be compared with a high speed chain drive in general freedom from annoyance and smoothness of running.

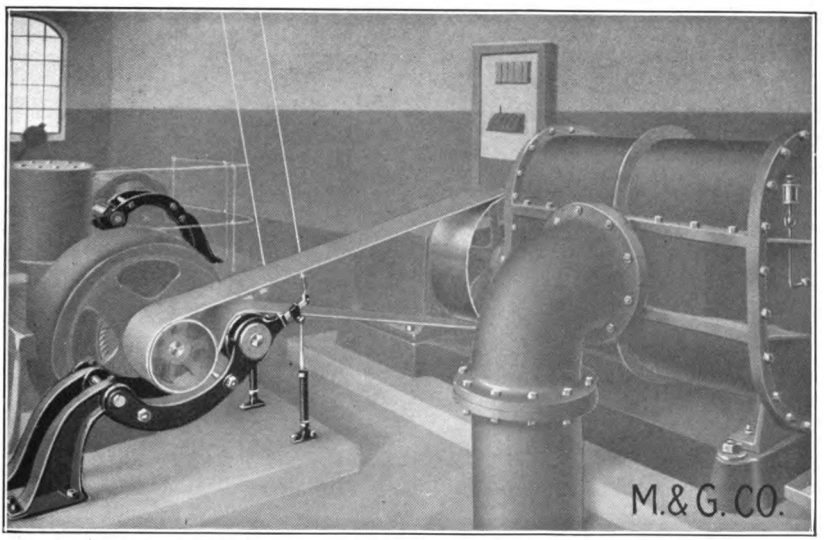
The application of the **M & G** *Shortcenter* Belt Drive is very broad and covers light high speed devices to heavy transmissions of power. On the following pages we show a few characteristic drives.

As the **M & G** *Shortcenter* Belt Drive is, strictly speaking, an engineering proposition, and must be designed to meet the special conditions of each case, to insure success we ask those requiring *Shortcenter* Belt Drives to answer fully all the questions given on page 127 when writing for prices.

"*SHORTCENTER*" BELT DRIVES (*Continued*)



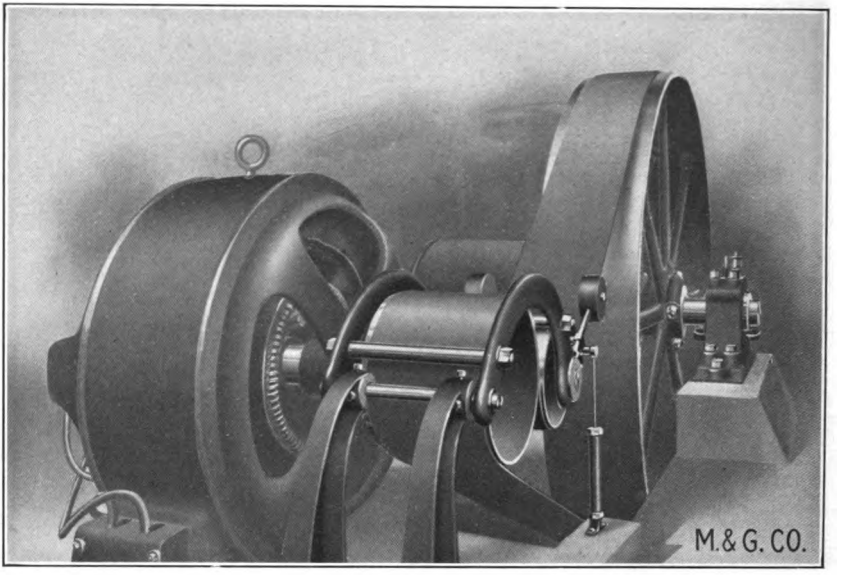
SHORTCENTER Belt Drive from motor to a line shaft.
The above picture shows its application to a vertical drive.



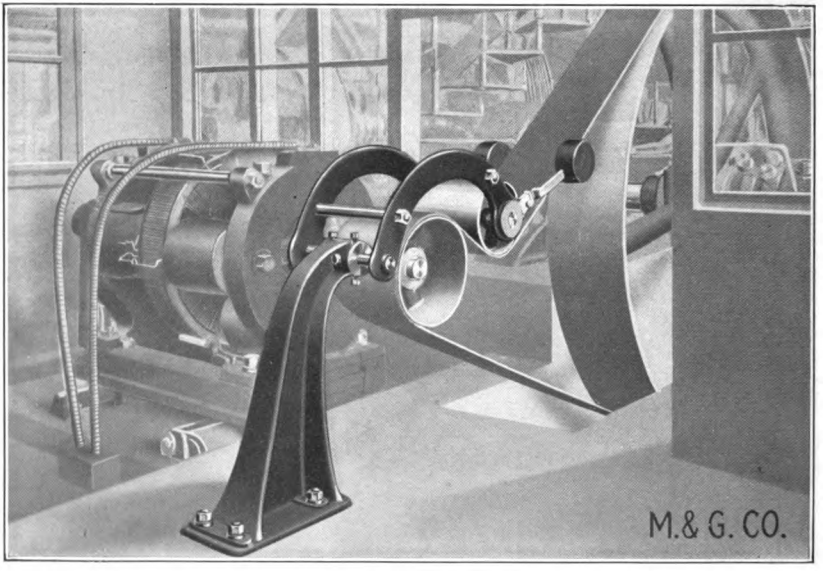
SHORTCENTER Belt Drive—operating a blower.

It will be noted that in this installation the idler is pulled upward against the belt by means of counterweighted ropes.

"*SHORTCENTER*" BELT DRIVES (*Continued*)

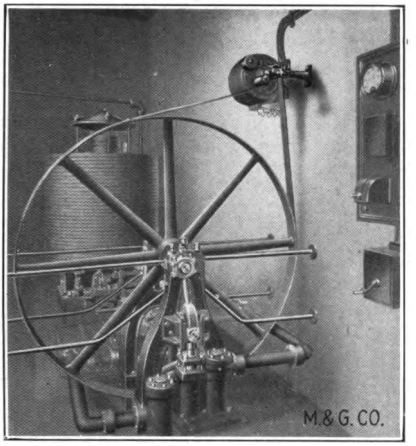


SHORTCENTER Belt Drive from motor to air compressor.



SHORTCENTER Belt Drive operating a 30 H. P. Dynamo.

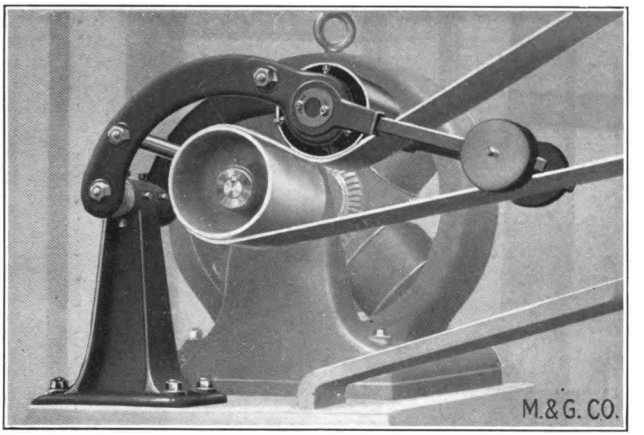
(*See Description on page 122.*)

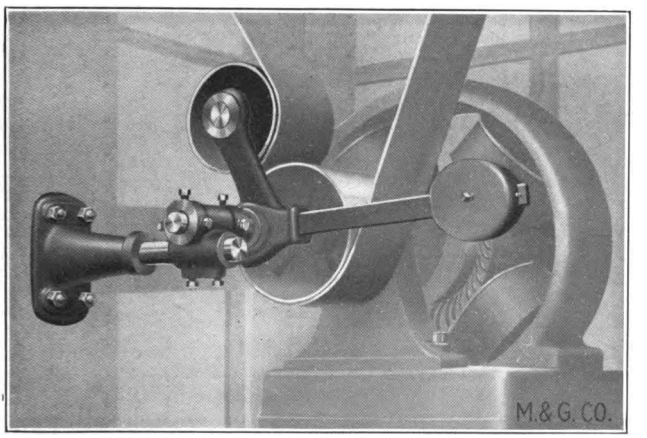


"*SHORTCENTER*"
BELT DRIVES (*Continued*)

(*See Description on page 122.*)

Application of *Shortcenter* Belt Drive, showing large reduction of speed possible with this form of drive. In the case illustrated, speed ratio is about 10 to 1.

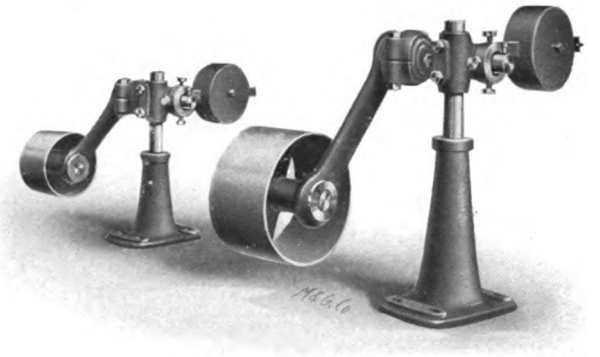


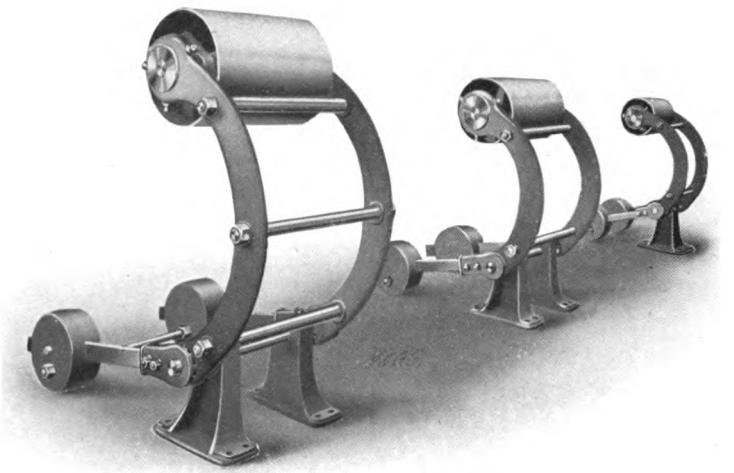


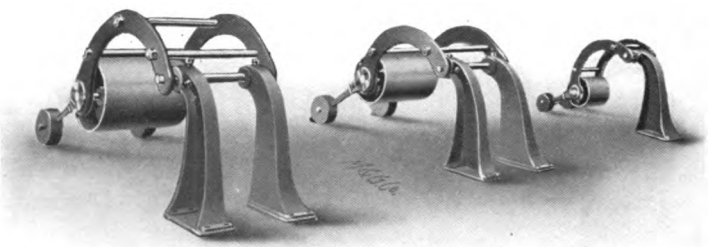
Two applications of *Shortcenter* Belt Drive from motors to line shafts.

One cut shows inclined drive with driving side of belt below, and the other shows a vertical drive.

"*SHORTCENTER*" BELT DRIVES (*Continued*)







Various designs in the tension idler stand showing three modifications in arrangement of arms, weights, etc.

(*See Description of "Shortcenter" Belt Drives on page 122.*)

"*SHORTCENTER*" BELT DRIVES (*Continued*)

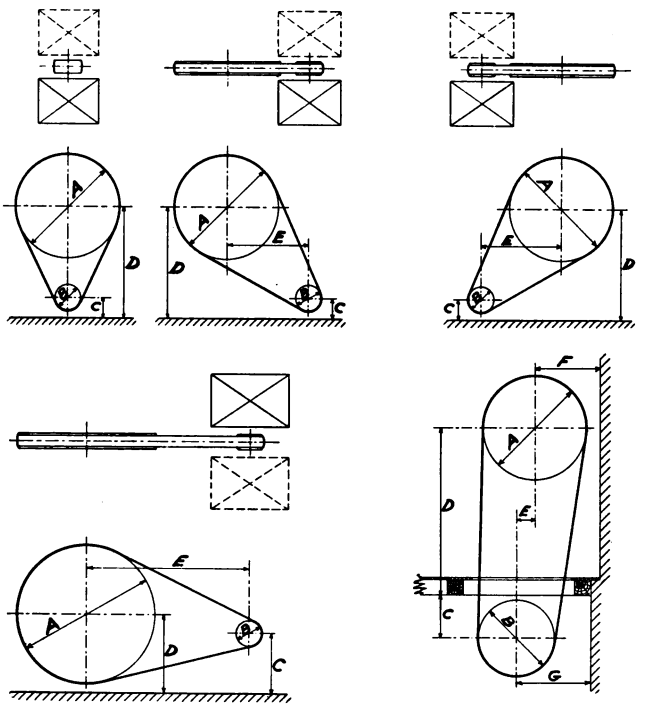
(*See description on page 122*)

In asking for prices on **M & G** *Shortcenter* Belt Drives, be careful to acquaint us with the following information:

1—Maximum horsepower to be transmitted.
2—Revolutions per minute of the driving shaft.
3—Diameter of the driving shaft.
4—Revolutions per minute of the driven shaft.
5—Diameter of the driven shaft.
6—Distance between centers.
7—Position of the installation, send sketch* with dimensions marked thereon showing *floor line* also *ceiling* or *walls*, etc., if near and mention their construction.
8—Direction of rotation of driving and driven shafts. (Denote same on sketch.)
9—What is the drive to be used for?
10—What motive power actuates the driving shaft?
11—How much space is there on each shaft for pulleys?
12—If pulleys are on hand, give diameter and face of each.

Upon receipt of all the information asked for above we will be enabled to submit figures on a suitable equipment.

*The sketches of different cases below will give an idea of what we require. Be sure to mark which shaft is the *driver* and give all data asked for in list above, also any other information relating to interference or proximity of walls, foundations, other machinery, etc.



LEATHER BELTING

Leather Belting is made in many grades and in many thicknesses known as, "light single," "medium single," "heavy single," "light double," "medium double," "heavy double," "triple," etc., and in most of these weights both "waterproof" and "plain". Therefore, in selecting a belt, care should be taken to specify the proper one for the work to be done, or, if in doubt, give us all the particulars and we will supply the grade most suitable.

See pages 132 and 133 for belting data, horsepower tables, etc.

OAK TANNED LEATHER BELTING

Price per running foot (Subject to discount)

Size	Single	Double	Size	Single	Double
½ in.	$ 0.12	$ 0.24 per foot	14 in.	$ 3.36	$ 6.72 per foot
⅝ "	.15	.30 "	15 "	3.60	7.20 "
¾ "	.18	.36 "	16 "	3.84	7.68 "
⅞ "	.21	.42 "	17 "	4.08	8.16 "
1 "	.24	.48 "	18 "	4.32	8.64 "
1¼ "	.30	.60 "	19 "	4.56	9.12 "
1½ "	.36	.72 "	20 "	4.80	9.60 "
1¾ "	.42	.84 "	21 "	5.04	10.08 "
2 "	.48	.96 "	22 "	5.28	10.56 "
2¼ "	.54	1.08 "	23 "	5.52	11.04 "
2½ "	.60	1.20 "	24 "	5.76	11.52 "
2¾ "	.66	1.32 "	25 "	6.00	12.00 "
3 "	.72	1.44 "	26 "	6.24	12.48 "
3¼ "	.78	1.56 "	27 "	6.48	12.96 "
3½ "	.84	1.68 "	28 "	6.72	13.44 "
3¾ "	.90	1.80 "	30 "	7.20	14.40 "
4 "	.96	1.92 "	32 "	7.68	15.36 "
4½ "	1.08	2.16 "	34 "	8.16	16.32 "
5 "	1.20	2.40 "	36 "	8.64	17.28 "
5½ "	1.32	2.64 "	40 "	9.60	19.20 "
6 "	1.44	2.88 "	44 "	10.56	21.12 "
6½ "	1.56	3.12 "	48 "	11.52	23.04 "
7 "	1.68	3.36 "	52 "	12.48	24.96 "
8 "	1.92	3.84 "	56 "	13.44	26.88 "
9 "	2.16	4.32 "	60 "	14.40	28.80 "
10 "	2.40	4.80 "	64 "	15.36	30.72 "
11 "	2.64	5.28 "	68 "	16.32	32.64 "
12 "	2.88	5.76 "	72 "	17.28	34.56 "
13 "	3.12	6.24 "			

PATENT SOLID ROUND

Per foot

⅛ inch.....	$0.05
3/16 "	.07
¼ "	.10
5/16 "	.14
⅜ "	.18

TWIST BELTING

Per running foot

⅛ inch....	$0.08	½ inch....	$0.38
3/16 "	.12	⅝ "	.48
¼ "	.17	¾ "	.60
5/16 "	.22	⅞ "	.80
⅜ "	.27	1 "	.96

CUT LACE

Revised List Effective January 1, 1915
Adopted by Lace Leather Manufacturers in the United States.
Per 100 running feet

¼ inch....	$2.50	½ inch....	$5.50
5/16 "	3.00	⅝ "	6.50
⅜ inch....	3.75	¾ inch....	7.50
7/16 "	4.50		

Lace Cutters will cut up to ⅛ inch thick leather and from 3/16 inch to ¾ inch wide. Price each, $0.50.

Wire lacing, lacing machines, and patent belt fasteners of all kinds will be quoted on application. Circulars on request.

RUBBER BELTING

Rubber Transmission Belting is made in several different grades by many different makers—the various grades supplied by us are designated as "best," "high grade" and "standard" and are all covered by the manufacturers' list given below.

In ordering, state grade of belt desired or mention all the conditions under which the belt will work and we will furnish the proper quality.

RUBBER BELTING PRICE LIST

Price per running foot (Subject to discount)

Inch	2 Ply	3 Ply	4 Ply	5 Ply	6 Ply	7 Ply	8 Ply
1	$ .09	$ .11	$ .13	$.....	$.....	$.....	$.....
1¼	.11	.13	.16	.....	.....	.....	.....
1½	.13	.15	.19	.23	.....	.....	.....
1¾	.15	.17	.22	.27	.....	.....	.....
2	.18	.20	.25	.31	.37	.....	.....
2½	.22	.25	.31	.38	.46	.....	.....
3	.26	.30	.37	.45	.55	.....	.....
3½	.30	.35	.43	.53	.65	.....	.....
4	.34	.40	.50	.61	.75	.86	.....
4½	.38	.45	.55	.69	.84	.96	.....
5	.42	.50	.61	.76	.91	1.06	.....
6	.50	.60	.72	.89	1.08	1.25	1.44
7	.59	.70	.84	1.04	1.25	1.46	1.68
8	.67	.80	.96	1.19	1.44	1.68	1.92
9	.76	.90	1.07	1.34	1.60	1.88	2.16
10	.84	1.00	1.20	1.49	1.77	2.09	2.40
11	.92	1.10	1.32	1.63	1.96	2.29	2.62
12	1.00	1.20	1.43	1.78	2.15	2.50	2.85
13	1.10	1.30	1.56	1.95	2.34	2.73	3.12
14	1.19	1.40	1.69	2.11	2.54	2.96	3.39
15	1.28	1.52	1.83	2.28	2.74	3.19	3.65
16	1.37	1.65	1.96	2.44	2.94	3.42	3.92
18	1.55	1.87	2.22	2.77	3.33	3.88	4.44
20	1.74	2.09	2.49	3.10	3.73	4.35	4.97
22	1.94	2.33	2.77	3.47	4.16	4.85	5.54
24	2.16	2.60	3.08	3.85	4.62	5.39	6.16
26	2.38	2.86	3.39	4.23	5.08	5.93	6.78
28	2.60	3.12	3.70	4.62	5.54	6.47	7.39
30	2.82	3.39	4.00	5.00	6.00	7.00	8.00
32	3.04	3.65	4.31	5.39	6.47	7.55	8.62
34	3.26	3.92	4.62	5.78	6.93	8.09	9.24
36	3.48	4.18	4.93	6.16	7.39	8.62	9.86
38	3.70	4.44	5.24	6.55	7.85	9.16	10.47
40	3.92	4.71	5.55	6.93	8.32	9.70	11.09
42	4.14	4.97	5.85	7.32	8.78	10.24	11.70
44	4.36	5.24	6.16	7.70	9.24	10.78	12.32
46	4.53	5.50	6.47	8.08	9.70	11.32	12.94
48	4.80	5.76	6.73	8.47	10.16	11.86	13.55
50	5.02	6.03	7.08	8.85	10.63	12.40	14.17
52	5.22	6.29	7.39	9.24	11.09	12.94	14.78
54	5.46	6.56	7.70	9.63	11.55	13.48	15.40
56	5.68	6.82	8.01	10.01	12.01	14.01	16.02
58	5.90	7.08	8.32	10.40	12.47	14.55	16.63
60	6.12	7.35	8.62	10.78	12.94	15.09	17.25

CANVAS BELTING

Red Stitched
Price per running foot (Subject to discount)

Inches	4 Ply	5 Ply	6 Ply	8 Ply	10 Ply
1	$ .12	.....	.....	.....	.....
1½	.18	.....	.....	.....	.....
2	.24	$0.30	$0.36	.....	.....
2½	.30	.38	.45	.....	.....
3	.35	.44	.53	.....	.....
3½	.39	.49	.59	.....	.....
4	.43	.54	.65	$0.86	.....
4½	.47	.59	.71	.94	.....
5	.51	.64	.77	1.02	.....
6	.60	.75	.90	1.20	.....
7	.70	.88	1.05	1.40	.....
8	.80	1.00	1.20	1.60	.....
9	.90	1.13	1.35	1.80	.....
10	1.00	1.25	1.50	2.00	.....
11	1.10	1.38	1.65	2.20	.....
12	1.20	1.50	1.80	2.40	$3.00
13	1.43	1.79	2.15	2.86	3.58
14	1.54	1.93	2.31	3.08	3.85
15	1.65	2.06	2.48	3.30	4.13
16	1.76	2.20	2.64	3.52	4.40
18	1.98	2.48	2.97	3.96	4.95
20	2.20	2.75	3.30	4.40	5.50
22	2.42	3.03	3.63	4.84	6.05
24	2.64	3.30	3.96	5.28	6.60
26	3.12	3.90	4.68	6.24	7.80
28	3.36	4.20	5.04	6.72	8.40
30	3.60	4.50	5.40	7.20	9.00
32	3.84	4.80	5.76	7.68	9.60
34	4.08	5.10	6.12	8.16	10.20
36	4.32	5.40	6.48	8.64	10.80
38	4.94	6.18	7.41	9.88	12.35
40	5.20	6.50	7.80	10.40	13.00
42	5.46	6.83	8.19	10.92	13.65
44	5.72	7.15	8.58	11.44	14.30
46	5.98	7.48	8.97	11.96	14.95
48	6.24	7.80	9.36	12.48	15.60

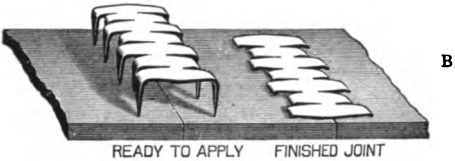
SOLID WHITE COTTON BELTING

Price per running foot (Subject to discount)

Width in Inches	2 Ply	3 Ply	4 Ply	5 Ply	6 Ply	8 Ply	10 Ply
1	$0.04	$0.06	$0.09	$0.15	$0.20	.....	.....
1¼	.04½	.06½	.10	.16	.22	.....	.....
1½	.05	.07½	.11	.18	.24	.....	.....
1¾	.05½	.08½	.12	.19	.29	.....	.....
2	.06	.09½	.13	.21	.30	$0.36	.....
2½	.07½	.11	.15	.23	.32	.38	.....
3	.08½	.13	.18	.26	.34	.41	.....
3½	.10	.15	.20	.29	.36	.45	.....
4	.11½	.17	.23	.31	.38	.50	.....
4½	.13	.19	.26	.33	.41	.55	.....
5	.14½	.21	.28	.36	.44	.58	$0.80
5½	.16	.23	.30	.38	.47	.61	.85
6	.18	.25	.33	.41	.50	.65	.95
7	.21	.29	.38	.48	.58	.75	1.10
8	.23	.33	.44	.55	.65	.85	1.20
9	.26	.37	.50	.61	.73	1.00	1.40
10	.29	.42	.56	.69	.82	1.15	1.60
12	.35	.50	.66	.83	1.00	1.35	1.80
14	.43	.62	.78	.98	1.20	1.60	2.20
16	.49	.72	.90	1.15	1.40	1.95	2.45
18	.57	.82	1.00	1.28	1.55	2.15	2.70
20	.61	.90	1.15	1.45	1.75	2.35	2.95
22	.65	1.00	1.35	1.65	1.95	2.60	3.25
24	.69	1.10	1.55	1.85	2.16	2.85	3.60

BELTING DATA

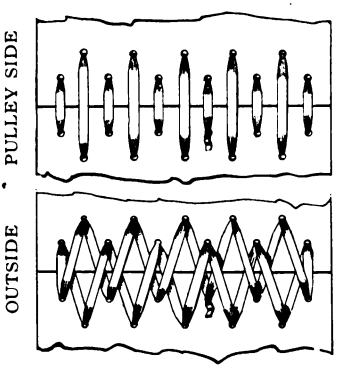
METHODS OF BELT SPLICING



BRISTOL'S PATENT STEEL BELT LACING

Necessary for Canvas and Woven Belts and used a great deal on Rubber and Leather Belts.

Prices of various kinds of belt fasteners and wire lacing machines on application. (In writing for prices mention size and style of belt and what work it will be used for).



NUMBER OF HOLES REQUIRED (Per Side)

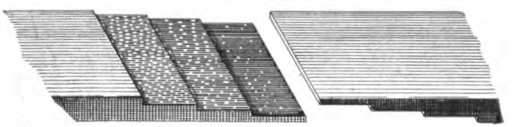
Belt	Holes	Belt	Holes
2 inch.....	5	12 inch.....	25
3 "	7	14 "	29
4 "	9	16 "	33
5 "	11	18 "	37
6 "	13	20 "	41
7 "	15	24 "	49
8 "	17	28 "	57
10 "	21	.....	.....

WIDTH OF LACE REQUIRED

¼ inch lace will lace 1 to 2¼ inch Belt.
⅜ " " " " 2½ to 4½ inch Belt.
⅝ " " " " 5 to 6 inch Belt.
¾ " " " " 7 to 10 inch Belt.
½ " " " " 12 to 16 inch Belt.
¾ " " " " 20 inch and wider Belts.

REGULAR BUTT SPLICE FOR RUBBER AND LEATHER BELTS

(For Price List of Leather Belting see page 128)



STEP SPLICE, THE BEST FOR RUBBER BELTS

PROPER LENGTH OF SPLICE

For 12 inch belts...30 inch
" 16 " " ...32 "
" 24 " " ...36 "
" 30 " " ...40 "
" 48 " " ...48 "

Step off the plies as shown, being careful not to cut plies beneath the portion removed. Scrape exposed duck carefully and coat with at least three coats of rubber cement allowing one to dry before putting on the next. When the last coat is tacky place ends of belt together and pound. Then punch and sew with narrow lace leather, or rivet with copper rivets and burrs.

For Price List of Rubber Belting see page 129.

TO FIND LENGTH OF BELT

In cases where pulleys are of nearly the same diameter and are at considerable distances, a fairly accurate and easy rule is as follows:—Add the diameter in inches of the driving and the driven pulleys; multiply this sum by 3⅛ and divide by 2. To the number thus obtained, add twice the distance from center of shafts in inches, and the result will be the length of the belt (without lap) in inches.

A more exact method of determining the length of belt necessary to connect two pulleys on different shafts is as follows:

Length of belt without lap $= 2\sqrt{L^2 + (R-r)^2} + (R\ 3.1416 + r\ 3.1416)$ in which L is the distance from center to center of shafts in inches. R is the radius of the large pulley in inches. r is the radius of the small pulley in inches.

BELTING DATA (*Continued*)

Leather belts are manufactured in three grades as follows:

"BEST"—Made from center cuts only of pure oak tanned leather and may be had either waterproof or plain—either single or double—in three weights each—heavy, medium and light. For heavy work and long life a better belt cannot be obtained.

"HIGH GRADE"—A fine belt for general usage, made either single or double in three weights each—heavy, medium and light.

"STANDARD"—A light weight belt for light work, where a better belt is not required. Made single and double.

ENDLESS BELTS WILL BE FURNISHED, EITHER FINISHED AT THE FACTORY OR PROPERLY SCARFED READY FOR SPLICING

DYNAMO AND M & G *SHORTCENTER* DRIVE BELTS RECEIVE SPECIAL ATTENTION

TRIPLE BELTS MADE TO ORDER

For Price List of Leather Belting see page 128.

APPROXIMATE THICKNESSES AND WEIGHTS OF LEATHER BELTS

Designation	Ounces per square foot	Thickness inches	Designation	Ounces per square foot	Thickness inches
Light Single	14	1/8	Medium Double	29	11/64
Medium Single	16	7/64	Heavy Double	32	3/8
Heavy Single	18	1/4	Triple	48	13/64
Light Double	25	1/4 Full			

When ordering Belts state quality and thickness wanted.

Heavy Double Belts should not be used on pulleys less than 14 inch diameter. Medium Double Belts should not be used on pulleys less than 10 inch diameter.

APPROXIMATE EQUIVALENTS IN LEATHER, RUBBER AND CANVAS BELTING

STYLE	THICKNESS OF BELT						
Leather Belt	Light single 1/8 inch thick	Medium single 7/64 inch thick	Heavy single 1/4 inch thick	Light double 1/4 inch full	Medium double 11/64 inch thick	Heavy double 3/8 inch thick	Triple 13/64 inch thick
Rubber Belt (of 32 or duck)...	3 ply	4 ply	5 ply	6 ply	7 ply	8 ply	10 ply
Stitched Canvas Belt	4 ply	5	5 or 6	6 or 7	8	10	12

(Rubber Belting is considered to be about 1/64 inch thick per ply.)

Note—The above table is approximate only as manufacturers' claims show considerable variance.

BELTING DATA (*Continued*)

HORSEPOWER TRANSMITTED BY LEATHER BELTS

The table below is for properly designed drives using best quality of *double leather* belting 3/8 inch thick, and is figured to allow for the tension of slack side and the effect of centrifugal force.

The figures are based on a working strain of 340 lbs. per square inch of cross section and an arc of contact on pulley of 160 degrees.

For other angles of contact multiply the H. P. of table by the following correcting figures:

Arc of Contact	Multiply H-P by	Arc of Contact	Multiply H-P by	Arc of Contact	Multiply H-P by
100 degrees	.74	150 degrees	.96	190 degrees	1.10
110 "	.79	160 "	1.00	200 "	1.12
120 "	.84	170 "	1.02	210 "	1.14
130 "	.89	180 "	1.06	220 "	1.16
140 "	.93				

SPECIAL NOTE—Since the Horsepowers in table below are figured for belting 3/8 inch thick, and, since the words "single" or "double" belt mean almost anything, the following figures should be used to multiply the H-P of table to correct it for any thickness of belt desired.

For Belts 1/8 inch thick multiply Horsepower of table by .333
" " 3/16 " " " " " " .500
" " 1/4 " " " " " " .666
" " 5/16 " " " " " " .835

Speed in feet per Minute	Width of Belt in Inches (Best double leather 3/8 inch thick)								
	2	3	4	5	6	8	10	12	14
	H-P	H-P	H-P	H-P	H-P	H-P	H-P	H-P	H-P
400	2.10	3.15	4.20	5.25	6.3	8.4	10.	12.	14.
600	3.20	4.80	6.40	8.00	9.6	12.8	16.	19.	22.
800	4.20	6.30	8.40	10.50	12.6	16.8	21.	25.	29.
1000	5.24	7.86	10.48	13.10	15.7	20.9	26.	31.	36.
1200	6.20	9.30	12.40	15.50	18.6	24.8	31.	37.	43.
1500	7.70	11.55	15.40	19.25	23.1	30.8	38.	46.	54.
1800	9.10	13.65	18.20	22.75	27.3	36.4	45.	54.	64.
2000	10.00	15.00	20.00	25.00	30.0	40.0	50.	60.	70.
2400	11.80	17.70	23.60	29.50	35.4	47.2	59.	70.	82.
2800	13.40	20.10	26.80	33.50	40.2	53.6	67.	80.	94.
3000	14.20	21.30	28.40	35.50	42.6	56.8	71.	85.	99.
3500	15.90	23.85	31.80	39.75	47.7	63.6	79.	95.	111.
4000	17.50	26.25	35.00	43.75	52.5	70.0	87.	105.	122.
4500	18.80	28.20	37.60	47.00	56.4	75.2	94.	112.	131.
5000	19.70	29.55	39.40	49.25	59.1	78.8	98.	118.	138.

Note—Also see table of Pulley Horsepowers on page 148.

BELT TRANSMISSION

The transmission of mechanical power from one shaft to another may be accomplished in many ways—belts, ropes, cables, gears, chain, frictions, etc., and some of the methods have been brought to a high state of efficiency, but it is safe to say that Belt Drives still lead, and perhaps always will lead all other methods of transmitting motion from shaft to shaft in industrial plants.

The reason for the maintained supremacy is the simplicity of this method, its flexibility, low cost, and efficiency when properly installed.

When direct motor drives came forward a few years ago, it was generally thought that motors connected direct to all machines would in time displace entirely the method of driving by means of belts—but while individual motor drives are of great value in some cases, they have on the whole, not made much progress against properly designed belt transmission.

BELT DRIVES VS. DIRECT CONNECTED MOTOR DRIVES

The following words from the pen of the late Mr. F. W. Taylor, an authority on scientific shop management, are of interest in this connection. He said:

"The writer is firmly convinced, through large personal observation in many shops and through having himself systematized two electrical works, that, in perhaps *three cases out of four* a properly designed belt drive is preferable to the individual motor drive for machine tools. There is no question that through a term of years the total cost, on the one hand, of individual motors and electrical wiring, coupled with the maintenance and repairs of this system, will far exceed the first cost of properly designed shafting and belting plus maintenance and repairs. There is no question, therefore, that in many cases the motor drive means in the end *additional complication and expense* rather than simplicity and economy."

NOTE—The *italics* are ours.

However, Belt Drives to give satisfaction must be properly designed to accomplish the work for which they are intended, and while the standard text books are full of data on the subject, we think that the data given on the preceding two pages and that to follow will enable the practical man to select the proper size belt for any drive he may wish to install, though we are ready at all times to assist through our Engineering Department in the proper proportioning of pulleys, etc., to secure the best results.

BELT TRANSMISSION (*Continued*)

SPEED—It must be remembered that while more horsepower can be transmitted by increasing the speed of belts, the increase is *not* proportionate to speed, but falls off rapidly above 4800 feet per minute, due to the action of centrifugal force.

HORSEPOWER—The figures given in table on page 133 make allowance for centrifugal force, and may be used for any thickness or style of belt by using the various modifying factors given on pages 132 and 133.

LEATHER BELTING—Used with the hair or grain side to the pulleys is what such horsepower figures are usually based on, as the coefficient of friction is somewhat better—sometimes rated as 30 per cent greater than the flesh side—though this is open to question.

CRACKING OF LEATHER BELTS—Leather belts run the flesh side out are less liable to crack than when reversed as the fibers of the flesh side are more flexible.

SLACK SIDE AND TIGHT SIDE—The slack side should always be uppermost if possible, and the tight side underneath, as the arc of contact on the small pulley is thereby increased.

LAGGED PULLEYS—On difficult drives leather lagging on pulleys may be resorted to, as it increases the traction from 30 to about 50 per cent over plain metal rims.

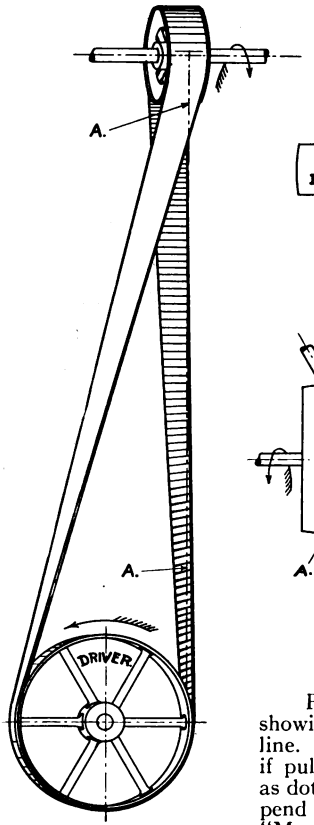
DISTANCE BETWEEN CENTERS—In ordinary belt drives much depends on the distance between centers, and as a rule, with certain limits, the longer the better, as it increases the arc of contact and provides more "spring" in the belt to maintain contact on pulleys.

RULE FOR CENTERS—A rule for proper centers covering any drive is hard to give, but it may be generally stated—make it four times the diameter of the largest pulley minus the diameter of the other pulley—but never less than 8 or 9 feet for ordinary work. This is approximate only as much depends on conditions.

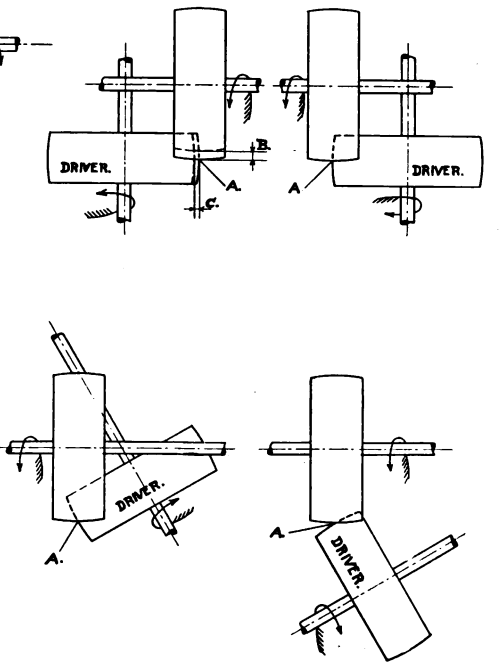
VERY SHORT CENTERS—Very short centered drives may be successfully installed by resorting to resilient idler pulleys—see **M & G** *"SHORTCENTER"* Drives on page 122.

BELT TRANSMISSION (*Continued*)

ANGULAR AND QUARTER TURN DRIVES—Belts may be successfully run over pulleys that are not parallel to each other by observing the following rule: The center of the face of the *driving* pulley *where belt leaves the pulley* must be in line with the center of the face of the *driven* pulley *where the belt leaves the pulley*; in other words, *the centers of the faces at the leaving sides must be in line*; such drives should be made of very long centers to get the best result, and are not reversible unless the relation of the pulleys is also reversed. See cuts below.

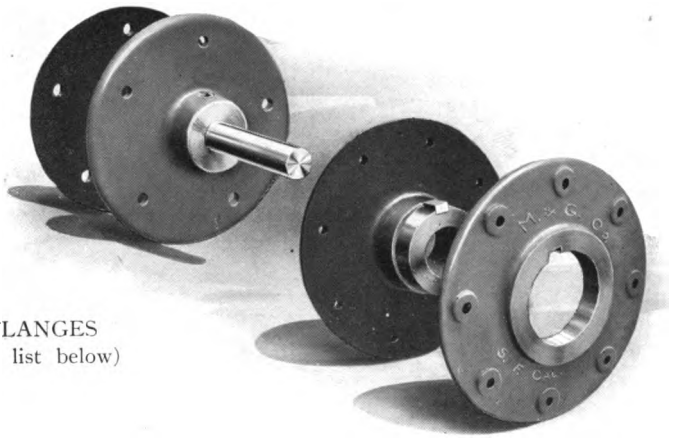


Elevation Quarter Turn Drive



Plan views of quarter turn and angle drives, showing center of leaving sides "A" of pulleys in line. In practice the belts stay in place better if pulleys are set slightly *back* of the point "A" as dotted at "B" and "C". These distances depend on the nature of the belt, but Bach, in "Machinen-elemente," gives "B" as from .5 to .6 the width of the belt and "C" .1 to .2 the width of the belt.

M & G CAST IRON PULLEY FLANGES



PLAIN FLANGES
(See list below)

*SLEEVE FLANGES

These flanges are suitable for a variety of uses—for the sides of built up Wood Pulleys, Paper Friction Wheels, etc.

They are furnished bored, faced, keyseated or setscrewed. (Straight keyseats with setscrews over, always furnished unless otherwise specified.)

We can also furnish flanges with sleeves. See cut above.

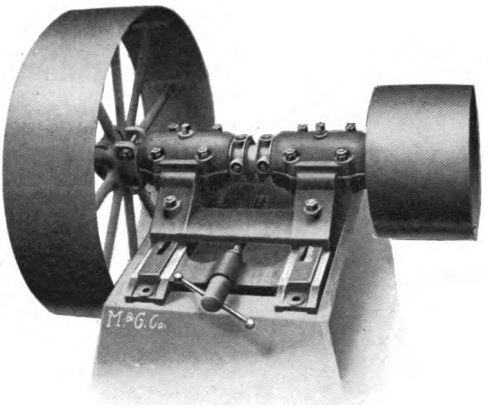
PRICE LIST PER PAIR—PLAIN FLANGES WITHOUT SLEEVES—
(Subject to discount)

Dia. Inches	Maximum Bore Inches	List Price per Pair	Dia. Inches	Maximum Bore Inches	List Price per Pair
6	1½	$2.00	22	4	$16.00
8	1¾	2.50	24	4¼	19.50
10	2	3.50	26	4½	24.00
12	2½	4.50	28	4¾	28.50
14	2¾	5.50	30	5	34.00
16	3	7.00	34	5¾	45.00
18	3½	10.00	38	6½	58.50
20	3¾	13.00	42	7	75.00

Flanges wanted with larger bores than listed above, will be subject to an additional charge.

*Price of Flanges with Sleeves will be quoted upon receipt of sketch showing just what is wanted.

M & G OIL WELL COUNTERSHAFT



When the electric motor was introduced in the oil fields, its economy and convenience soon insured it a permanent place.

However, owing to its speed of rotation being much higher than the steam engine formerly used, the matter of reducing the speed was met by a countershaft.

M & G Oil Well Countershafts were the first successful countershafts used in the California fields and the new model above pictured is still a long way ahead of all others.

This countershaft is principally used in oil well operations, but is also very useful in other work where a massive countershaft is required.

The M & G Oil Well Countershaft, as now made, embodies several distinct improvements over the models of several years ago and is *fortified against every weakness* developed by the daily use of the earlier models at hundreds of wells in the California fields.

The new model is of *very massive* construction. Has long *ring oiling* bearings with reservoir. Lower half of bearings *planed and recessed* to receive the caps which are also *planed* and held *immovable* when in position. A number of sheet steel liners are *accurately* fitted between upper and lower parts of bearings to facilitate adjustment for wear.

The frame is fitted with heavy *planed* sliding rails which are not separate as in the older models but are cast together in one rigid piece to hold all in perfect alignment and to allow belt tension to be regulated by the *turn of a single adjusting screw* and which may be done without stopping the motor or disturbing the alignment.

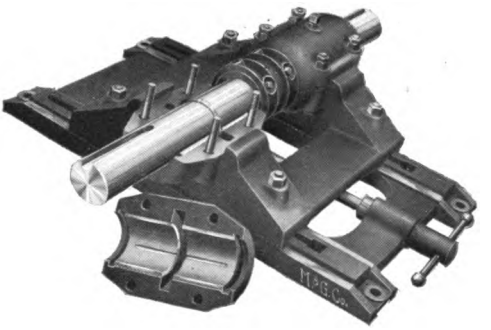
The use of a heavy single *pulling* screw for adjusting while the planed guides preserve the alignment is a great improvement over the old style in which two lighter *pushing* screws were used for adjusting and which *also* had to be manipulated to maintain the alignment of pulleys.

(*Continued on next page*)

M & G OIL WELL COUNTERSHAFT (*Continued*)

This countershaft is made in two sizes—$2\frac{15}{16}$" and $3\frac{15}{16}$" to take care of all work connected with the pumping, pulling or drilling of wells.

Altogether the M & G Ring-Oiling Countershaft is the *most improved, most substantial* and in every way, the very best oil well countershaft now obtainable.



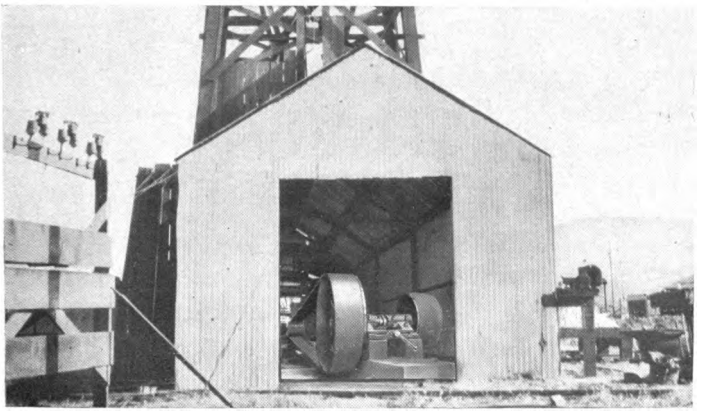
M & G OIL WELL COUNTERSHAFT

PRICE LIST WITHOUT PULLEY (Subject to discount)

Shaft, $2\frac{15}{16}$" diameter, base plate 24" x $34\frac{1}{2}$"—without pulleys	$ 85.00
" $3\frac{15}{16}$" " " " 24" x 42" — " "	100.00

NOTE—As different size pulleys are required under different conditions, it is impossible to list the pulleys with the countershaft. See price of any size pulley required in pulley lists at the front part of this catalog, or let us know the conditions of work and we will submit price complete with the proper size pulleys.

Extra heavy internally beaded Cast Iron Pulleys should be used to stand the work to which these countershafts are put.



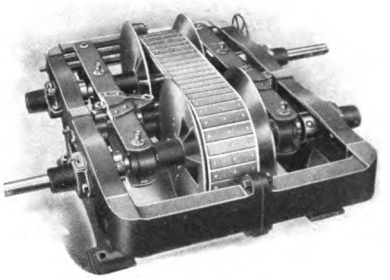
An M & G Oil Well Countershaft at Work in one of the Derrick Houses in the California Oil Fields.

"THE REEVES" VARIABLE SPEED TRANSMISSION

"*The Reeves*" Variable Speed Transmission is applicable to any machine of whatever nature requiring speed changes.

Wherever step cones, taper cones, expanding pulleys, gears, variable speed engines, motors or other devices have been used, "*The Reeves*" Variable Speed Transmission may be applied.

It is made in sizes to transmit any amount of power up to 150 horsepower—to perform any range of variation from 2 to 1 to 10 to 1.



It gives quickly, any speed between fastest and slowest, without stopping; does not step from one speed to another but gives a gradual change, steady power and perfect control of the machine driven. A turn of a crank secures any speed you need.

The frame is of cast iron, in two pieces, hangers cast solid with frame. The main boxes have ring-oiling bearings, and the hubs of the disks work against special roller-thrust bearings. Friction is reduced to the minimum and the efficiency is very high.

The Transmission may be suspended from the ceiling or set upon the floor, and used the same as an ordinary countershaft. Belt from the line shaft to the constant shaft of the Transmission, and from the variable shaft to the machine to be driven. Either shaft may be used as driver or driven.

IN MAKING INQUIRY of us as to the size of Transmission required for driving any machine the following data should be given us:

1—Kind of machine to be driven.
2—Diameter of drive pulley on the machine.
3—Width of belt used on this pulley.
4—Whether double or single belt is used.
5—Highest speed it is desired to run this pulley.
6—Lowest speed it is desired to run this pulley.
7—Speed of line shaft from which Transmission will be driven.
8—Whether Transmission is to be used on floor or ceiling.

Before recommending the size of Transmission for driving any given machine, we must have complete data concerning same. Send sketches if possible.

A large special catalog on "the Reeves" Transmission will be sent on request.

"THE REEVES" VARIABLE SPEED TRANSMISSION
(Continued)

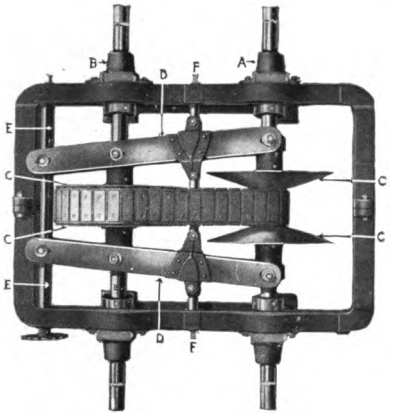


Figure 1

Figure 1 shows disks on driving shaft separated to admit V belt to the smallest driving surface and the disks on the driven shaft brought together, so that the V belt assumes the greatest driving surface, thus propelling the driven shaft at its minimum speed.

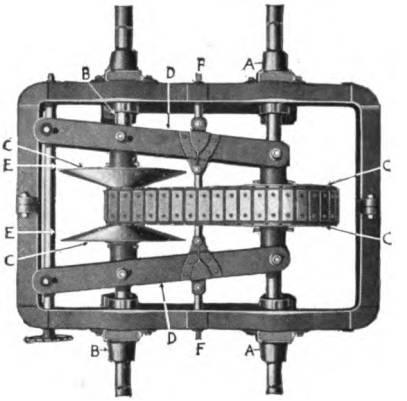


Figure 2

Figure 2 shows exactly the opposite conditions, whereby the V belt on the driving shaft assumes the largest driving surface and the driven the smallest, thus propelling the driven shaft at its maximum speed.

HOW IT OPERATES

Two pairs of cone-shaped disks "C" are spline mounted on two parallel shafts "A" and "B". These disks have their apexes facing and are movable on the shaft, and are operated by pivoted levers "D", which are actuated by a screw "E" in such manner as to bring one pair of disks together while the other pair is separated an equal distance, and at the same time preserve a uniform tension of the special V belt.

The faces of these disks form a V-shaped groove into which is fitted the specially designed V belt, having its bearing surface on the edges instead of the bottom, as an ordinary belt.

The belt is fitted with hardwood blocks, of precisely the same length, bolted to the belt body, the ends of these blocks being given the proper angle to fit the faces of the disks, and tipped with leather.

Proper tension of the belt may be maintained by adjusting the take-up screws "F".

One pair of disks acts as driver and runs at a constant speed. The other pair acts as driven and runs at varying speeds. As the disks on the constant shaft are brought together so the belt assumes the larger diameter on same, the disks on the variable shaft are separated so the belt assumes the smaller diameter and the speed is increased. When the opposite condition prevails, the speed is decreased. The shifting screw "E" is operated by a small hand-crank which is turned one direction to increase the speed and the opposite direction to reduce it.

Price list is given on page 143.

"THE REEVES" VARIABLE SPEED TRANSMISSION
(Continued)

EXPLANATION OF PRICE LIST AND TABLE GIVEN ON OPPOSITE PAGE

To meet all the varying problems of speed control we manufacture the Transmission in fourteen different numbers and seven classes.

The number indicates the size, and the class the amount of speed variation of the different sizes.

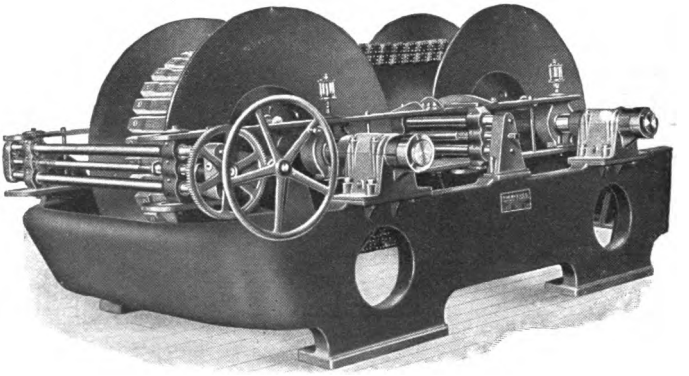
Referring to maximum and minimum horsepower, as shown in the table, the maximum horsepower shown is the power that the Transmission will deliver from the variable shaft when the constant speed shaft is run at the maximum revolutions indicated in the table, and the "V" belt is at the largest diameter of the disks on this shaft.

The minimum horsepower, as shown, is the power that the Transmission will deliver from the variable shaft when the constant speed shaft is run at the speed indicated in the table, and the "V" belt is at the smallest driving diameter it assumes on this shaft.

The various Transmissions will carry the size pulley shown, or its equivalent, on the variable shaft. Working stress of belt, 60 pounds per inch of width.

The constant speed shaft must not, under any condition, be run at a greater speed than indicated in the table; it may be run at a lesser speed, but in this event, the power transmitted will be proportionately decreased.

We will not be responsible for the successful operation of the Transmission if instructions are not complied with.



General Design, Nos. 7 to 10, inclusive, illustrating Power Shifting Device.

The larger sizes are the same in principle as the smaller sizes, except that they have heavy cast iron bases, and are built very strong to withstand extra hard service.

They have either hand or power shifting device.

On sizes Number 8 and above, the disks, instead of being driven by keys in the shafts are equipped with pin drive.

"THE REEVES" VARIABLE SPEED TRANSMISSION
(Continued)

TABLE OF CAPACITIES AND PRICES (Subject to discount)
Read explanation of table on opposite page

No. and Price	CLASS	A	B	C	D	E	F	G
	Ratio of total variation in speed of variable shaft	1 to 10	1 to 8	1 to 6	1 to 5	1 to 4	1 to 3	1 to 2
	*Ratio of increase or decrease in speed of the variable shaft above or below the speed of the constant shaft	1 to 3.16	1 to 2.82	1 to 2.44	1 to 2.23	1 to 2	1 to 1.73	1 to 1.41
0	Max. speed con. shaft				412	425	437	450
	Minimum H. P.				2½	2¾	3¼	4
$100.	Maximum H. P.				5¼	5½	5¾	6
	Max. pulley on var. shaft				7x2	5x3	6x3	7x3
1	Max. speed con. shaft				387	400	412	425
	Minimum H. P.				3½	4¼	5	6¼
$125.	Maximum H. P.				8¼	8½	8¾	9
	Max. pulley on var. shaft				7x3	8x3	9x3	12x3
2	Max. speed con. shaft		325	335	346	357	369	380
	Minimum H. P.		3¼	3½	5	5¾	6¾	8¾
$175.	Maximum H. P.		8½	8¾	11¼	11½	12	12¼
	Max. pulley on var. shaft		7x3	8x3	8x4	9x4	10x4	12x4
3	Max. speed con. shaft	290	300	310	320	330	340	350
	Minimum H. P.	3½	4	4¾	6¾	7¾	9¼	11¾
$225.	Maximum H. P.	11½	11¾	12	15	15½	16	16½
	Max. pulley on var. shaft	7x4	8x4	9x4	9x5	10x5	12x5	14x5
4	Max. speed con. shaft	270	280	290	300	308	317	325
	Minimum H. P.	4½	5½	6½	8½	9¾	11¼	14¾
$300.	Maximum H. P.	15	15½	16	19¼	19½	20½	20¾
	Max. pulley on var. shaft	8x5	9x5	10x5	10x6	12x6	14x6	16x6
5	Max. speed con. shaft	260	267	275	285	293	300	310
	Minimum H. P.	6	7	8	10½	12	14½	18½
$400.	Maximum H. P.	19	19½	20	23½	24	25	25½
	Max. pulley on var. shaft	8x6	10x6	11x6	14x6	16x6	18x6	22x6
6	Max. speed con. shaft	220	227	235	242	250	257	265
	Minimum H. P.	7¼	8½	10	12¾	14½	17½	22
$500.	Maximum H. P.	23	23¾	25	28½	29	30	31
	Max. pulley on var. shaft	12x6	14x6	16x6	14x8	16x8	20x8	24x8
6½	Max. speed constant speed shaft			215	225	235	245	260
	Minimum H. P.			12	14	16	19	24
$850.	Maximum H. P.			30	31	32	33	34
	Max. pulley on variable speed shaft			20x6	16x8	18x8	20x8	20x10
7	Max. speed constant speed shaft			210	217	225	232	240
	Minimum H. P.			13	15	17½	21	26
$1,000.	Maximum H. P.			33	34	35	36	37
	Max. pulley on variable speed shaft			18x8	20x8	18x10	20x10	26x10
8	Max. speed constant speed shaft			195	200	207	213	220
	Minimum H. P.			17	19	22	27	34
$1,200.	Maximum H. P.			43	44	44	47	49
	Max. pulley on variable speed shaft			20x10	22x10	20x12	24x12	30x12
9	Max. speed constant speed shaft			172	178	184	190	195
	Minimum H. P.			24	27	32	38	48
$1,800.	Maximum H. P.			60	62	64	66	68
	Max. pulley on variable speed shaft			26x12	28x12	28x14	32x14	40x14
10	Max. speed constant speed shaft			153	157	161	165	170
	Minimum H. P.			32	37	42	50	63
$2,600.	Maximum H. P.			80	82	84	86	88
	Max. pulley on variable speed shaft			34x14	38x14	38x16	42x16	46x18
11	Max. speed constant speed shaft			134	138	142	146	150
	Minimum H. P.			41	46	53	63	80
$3,600.	Maximum H. P.			101	104	106	110	113
	Max. pulley on variable speed shaft			34x20	38x20	42x20	40x24	50x24
12	Max. speed constant speed shaft			121	125	129	133	136
	Minimum H. P.			54	61	71	85	106
$4,800.	Maximum H. P.			133	138	142	146	150
	Max pulley on variable speed shaft			42x24	46x24	42x30	48x30	58x30

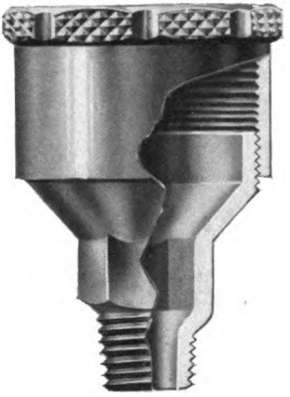
Nos. 6 ½ to 12 are not furnished with a wider range of variation of the variable shaft than 6 to 1.

*To find the maximum speed of the variable shaft, multiply the speed of the constant shaft by the figures as found below; and to find the minimum speed, divide the speed of the constant shaft by the same figures.

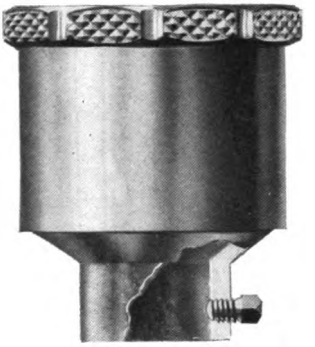
Class A—3.16 Class C—2.44 Class E—2. Class G—1.41
Class B—2.82 Class D—2.23 Class F—1.73

OILERS AND GREASE CUPS

Price List on next page

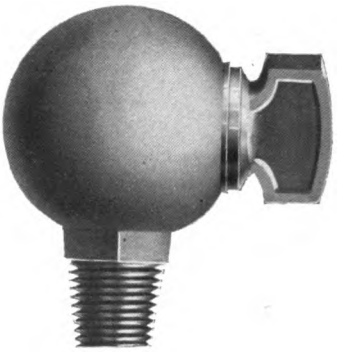


"Empress" Plain Compression Grease Cups, made of Pressed Steel. The Standard for regular use.



"Empress" Conveyor Grease Cup, made of Pressed Steel. (With plain end fitted with setscrew.)

"Empress" Spring Compression Grease Cup, made of Pressed Steel. Has adjustable automatic feed



"Van Duzen" Loose Pulley Oiler, made of Cast Brass. An automatic centrifugal oiler.

OILERS AND GREASE CUPS (*Continued*)

PRICE LIST (Subject to discount)

"EMPRESS" PLAIN COMPRESSION GREASE CUPS

(Pressed Steel)

Number	Inside Diameter	Pipe Thread	Capacity Ounces	Price Each
00	1 inch	⅛ inch	½	$0.50
0	1¼ inch	¼ inch	⅔	.65
1	1½ inch	¼ inch	1	.80
2	2 inch	⅜ inch	2	1.05
3	2½ inch	½ inch	3½	1.45
4	3 inch	½ inch	5	2.00

"EMPRESS" CONVEYOR GREASE CUP

(Pressed Steel)

Number	Diameter	Diameter of Hole in End	Capacity Ounces	Price Each
.....	3¼ inch	1¼ inch	8	$2.50

"EMPRESS" SPRING COMPRESSION GREASE CUP

(Pressed Steel)

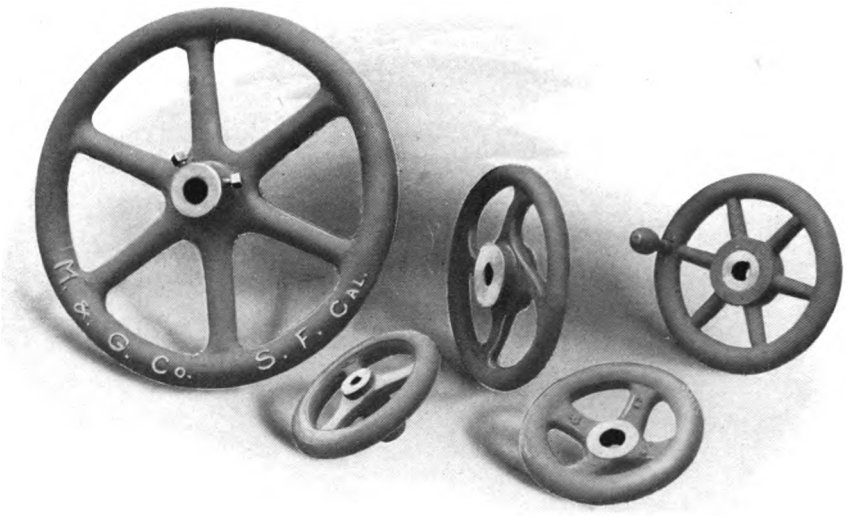
Number	Diameter	Extreme Height	Pipe Thread	Capacity Ounces	Price Each
00	1¼ inch	3¾ inch	⅛ inch	½	$1.30
0	1½ inch	4¾ inch	¼ inch	1	1.50
1	1¾ inch	5⅝ inch	¼ inch	1½	1.75
2	2¼ inch	6⅞ inch	⅜ inch	3	2.00
3	2¾ inch	7¼ inch	½ inch	6	2.75

"VAN DUZEN" LOOSE PULLEY OILERS

(Cast Brass)

Number	Diameter	Pipe Thread	Capacity Ounces	Price Each
00	⅞ inch	⅛ inch	1/6	$0.20
0	1⅛ inch	⅛ inch	¼	.25
1	1⅜ inch	¼ inch	½	.30
2	1⅝ inch	¼ inch	¾	.40
3	1⅞ inch	¼ inch	1⅛	.50

M & G CAST IRON HANDWHEELS



We have a variety of patterns for handwheels, and can suit almost any requirement.

Prices below are for plain handwheels. Special wheels will be made to order. When writing for prices of special wheels send sketch showing all dimensions.

PRICE LIST—PLAIN HANDWHEELS (Subject to discount)

Dia. Inches	Maximum Bore, Inches	Price	Dia. Inches	Maximum Bore, Inches	Price
4	¾	$1.50	11	1¾	$3.35
5	⅞	1.75	12	1¾	3.75
6	1	2.00	14	2	4.50
7	1⅛	2.25	16	2	5.75
8	1¼	2.50	18	2	7.75
9	1½	2.75	24	2½	10.00
10	1½	3.00			

Wheels wanted with larger bores than specified will be subject to an extra charge.

ENGINEERING DATA AND FORMULAS

In compiling this edition of our catalog, we have endeavored wherever possible to give data and engineering formulas relating to our goods at the various lists or description of such goods, so that such information would be found automatically by customers looking up the various goods.

But in some cases this procedure has not been possible; owing either to the broad nature of the data, or to the listed goods (for instance, Pulleys) running through many pages of the book; and data of this kind will be found on the following pages.

In this section No. 1 of our general catalog we have included at the end of the book, a certain amount of general data of an engineering nature, having no bearing on the goods listed, but likely to be of value to mechanical men generally.

Data pertinent to goods listed in other sections of our general catalog will also be found at the end of the respective sections unless given at the various lists of goods.

HORSEPOWER OF PULLEYS AT 300 R. P. M.

Approximately correct for best grade of leather belting with 160° arc of contact and sufficient distance between centers, for a good drive.

"S" and "D" in table signify single and double belts of $\frac{3}{16}$ and $\frac{3}{8}$ inches thickness respectively.

For other arcs of contact and other thicknesses of belts, see modifying factors on page 133.

Diameter Inches	Width of Face in Inches													
	2	3	4	5		6		7		8		10	
	S	S	S	S	D	S	D	S	D	S	D	S	D
6	1.2	1.9	2.5	3.1	6.3	3.8	7.6	4.4	8.9	5.0	10	6	12
7	1.4	2.2	2.9	3.6	7.2	4.3	8.7	5.	10.	5.8	11	7	14
8	1.6	2.5	3.3	4.1	8.3	5.0	10.	5.8	11.7	6.7	13	8	16
9	1.8	2.8	3.7	4.6	9.2	5.5	11.	6.5	13.	7.4	14	9	18
10	2.0	3.0	4.1	5.1	10.2	6.1	12.	7.2	14.3	8.2	16	10	20
11	2.2	3.3	4.4	5.5	11.1	6.7	13.	7.8	15.6	8.9	18	11	22
12	2.4	3.7	4.9	6.1	12.2	7.3	14.7	8.6	17.	9.8	19	12	24
13	2.6	3.9	5.2	6.6	13.2	7.9	15.8	9.2	18.5	10.5	21	13	26
14	2.8	4.2	5.7	7.1	14.2	8.5	17.	10.	20.	11.4	23	14	28
15	3.0	4.5	6.1	7.6	15.2	9.1	18.	10.6	21.	12.2	24	15	30
16	3.2	4.8	6.5	8.1	16.2	9.7	19.	11.4	22.7	13.0	26	16	32

	4		6		8		10		12		14		16	
	S	D	S	D	S	D	S	D	S	D	S	D	S	D
17	6.8	13.6	10.2	20.4	13.6	27	17.	34	20	40	23	47	27	54
18	7.2	14.5	10.9	21.8	14.5	29	18.	36	21	43	25	51	29	58
19	7.6	15.3	11.5	23.	15.3	30	19.	38	23	46	26	53	30	61
20	8.0	16.0	12.0	24.	16.0	32	20.	40	24	48	28	56	32	64
21	8.4	16.8	12.6	25.	16.8	33	21.	42	25	50	29	58	33	67
22	8.7	17.4	13.0	26.	17.4	34	22.	43	26	52	30	61	34	69
23	9.1	18.2	13.6	27.	18.2	36	22.7	45	27	54	31	63	36	72
24	9.5	19.0	14.2	28.5	19.0	38	23.8	47	28	57	33	66	38	76
25	9.8	19.6	14.7	29.5	19.6	39	24.6	49	29	59	34	69	39	78
26	10.2	20.4	15.5	30.6	20.4	40	25.	51	30	61	35	71	40	81
27	10.5	21.0	15.7	31.5	21.0	42	26.	52	31	63	36	73	42	84
28	10.9	21.8	16.3	32.7	21.8	43	27.	54	32	65	38	76	43	87
29	11.3	22.6	16.9	33.9	22.6	45	28.	56	33	67	39	79	45	90
30	11.6	23.2	17.4	34.8	23.2	46	29.	58	34	69	40	81	46	92

	6		8		10		12		14		16		18	
	S	D	S	D	S	D	S	D	S	D	S	D	S	D
32	18	36	24	48	30	61	36	73	42	85	48	97	54	109
34	19	38	25	51	32	64	38	77	45	90	51	103	58	116
36	20	40	27	54	33	67	40	81	47	94	54	108	60	121
38	21	42	28	56	35	71	42	85	49	99	56	113	63	127
40	22	44	29	58	36	73	44	88	51	102	58	117	65	131
42	22	45	30	60	38	76	45	91	53	106	60	121	68	137
44	23	47	31	63	39	79	47	95	55	110	63	126	71	142
46	24	49	32	65	40	81	49	98	57	114	65	130	73	146
48	25	50	33	67	42	84	50	100	58	117	67	134	75	151
50	26	52	34	69	43	86	51	103	60	121	69	138	77	155

	6		8		10		12		14		18		22
	S	D	S	D	S	D	S	D	S	D	S	D	D
52	26	53	35	71	44	88	53	106	62	124	79	159	195
54	27	54	36	72	45	90	54	108	63	126	81	163	199
56	27	55	37	74	46	92	55	110	64	129	82	165	202
58	28	56	38	76	47	94	56	113	66	132	85	170	208
60	29	57	38	77	48	96	57	115	67	134	86	173	211

The H. P. being directly proportionate to diameter, width and speeds (except where centrifugal force begins to act disastrously) sizes and speeds not given may be interpolated, or see table on page 133.

NOTE—Heavy Double Belts should not be used on pulleys less than 14 inches diameter. Medium Double Belts should not be used on pulleys less than 10 inches diameter.

RULES

For Determining Size and Speed of Pulleys (or Gear Wheels*)

The driving pulley is called the Driver, and the driven pulley the Driven.

To determine the diameter of Driver, (the diameter of the Driven and its revolutions, and also revolutions of Driver being given.)

$$\frac{\text{Diameter of Driven x revolutions of Driven}}{\text{Revolutions of Driver}} = \text{Diameter of Driver.}$$

To determine the diameter of Driven, (the revolutions of the Driven, and diameter and revolutions of the Driver being given.)

$$\frac{\text{Diameter of Driver x revolutions of Driver}}{\text{Revolutions of Driven}} = \text{Diameter of Driven.}$$

To determine the revolutions of the Driver, (the diameter and revolutions of the Driven, and diameter of the Driver being given.)

$$\frac{\text{Diameter of Driven x revolutions of Driven}}{\text{Diameter of Driver}} = \text{Revolutions of Driver.}$$

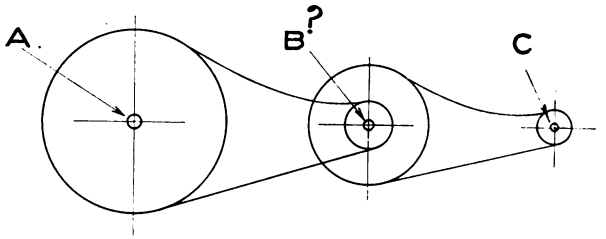
To determine the revolutions of the Driven, (the diameter and revolutions of the Driver, and diameter of the Driven being given.)

$$\frac{\text{Diameter of Driver x revolutions of Driver}}{\text{Diameter of Driven}} = \text{Revolutions of Driven.}$$

For table of horsepowers of pulleys see opposite page.

*To apply the above rules to gear wheels simply use the number of teeth on the wheels in place of the pulley diameters.

DETERMINING SPEED OF INTERMEDIATE SHAFT IN DOUBLE REDUCTION DRIVES



When the revolutions per minute of shafts "A" and "C" are known, to determine the revolutions per minute of shaft "B" to maintain uniformity in both reductions, use the following formula:

$$\sqrt{A \times C} = B$$

(The letters referring to the revolutions per minute of the shafts.)

WEIGHTS OF VARIOUS MATERIAL

In Pounds per Cubic Foot.

Aluminum	160
Ashes, damp	43
Asphalt pavement	80
Asphaltum	90
Brass, cast	511 to 536
Brass, rolled	524
Brick, pressed	150
Brick, common	125
Bronze	552
Carbon, solid	219
Cement, Louisville	50
Cement, Portland	80
Cement, Rosendale	60
Charcoal	18
Clay, in loose lumps	63
Clay, in bank	119
Clay, fire	100
Coal, Anthracite, broken loose	54
Coal, bituminous, broken loose	50
Coke	26
Copper, cast	542
Copper, rolled	555
Concrete, from	120 to 140
Earth, loose dry	63
Earth, common loam, dry, loose	76
Earth, moderately rammed	95
Earth, as soft as flowing mud	108
Earth, slightly moist	72
Earth, as soft as mud packed	115
Flour	56
Glass, window	150 to 180
Glass, broken	90
Granite	170
Gravel	90 to 110
Gypsum, Plaster of Paris	143
Gypsum, in irregular lumps	82
Gypsum, ground loose, calcined	56
Ice	58
Iron, cast	450
Iron, wrought	480
Lead	709
Lime, unslacked	30
Lime, ordinary quick, ground	52
Limestone, crushed	90
Mortar, average, hardened	106
Petroleum	55
Plumbago	140
Rosin	60 to 70
Salt	45
Saltpetre, Sodium Nitrate, fine	90
Sand, river	117
Sand, coarse	100
Sawdust	16
Shale, broken	85
Slate	175
Steel	488
Stone, broken	80 to 110
Sugar, Granulated	56
Sugar, Powdered	47
Tile	114
Water	62½

Woods—Dry

Douglas Fir	32
Oregon Pine	32
White Pine	25
Spruce	25
Yellow Pine, northern	34
Yellow Pine, Georgia	38
Maple	49
Oak, white	50
Oak, live	59

For weight per board foot take one-twelfth of the above.

(Green wood weighs from 20 to 50 per cent more than the above figures.)

Zinc	438

FOOD STUFFS, ETC.

Weights per Bushel, in Pounds.

Apples, dried	26
Barley	48
Beans, castor	46
Beans, cocoa, crushed	45
Beans, white	60
Beets, sugar	38
Bran	20
Buckwheat	48
Corn, on cob	70
Corn, shelled	56
Flour	70
Malt	38
Meal, corn	48
Oats	32
Onions	57
Peaches, dried	33
Peas	60
Potatoes, Irish	60
Potatoes, sweet	55
Rye	56
Salt, coarse	56
Seed, blue grass	44
Seed, clover	60
Seed, cotton	30
Seed, flax	56
Seed, hemp	44
Seed, Hungarian grass	50
Seed, Timothy	45
Turnips	55
Wheat	60

Weights per Barrel of Different Materials.

Beer, 15 gal. barrel, 15x20x25 inches high	180
Beer, 31 gal. barrel, 18x26x32 inches high	350
Beef	200
Cement	300
Fish	200
Flour	196
Oil, crude	400
Pork	200
Salt	280
Soap	256

RELATION BETWEEN BUSHELS AND CUBIC FEET

Volume, Conversion Tables

To change feet to bushels, multiply by .8035
To change bushels to feet, multiply by 1.2445

Weight, Conversion Tables

Given weight of a bushel, multiply by .8035 to find weight of a cubic foot.
Given weight of a cubic foot, multiply by 1.2445 to find weight of a bushel.

WEIGHTS OF SHEET IRON AND STEEL

U. S. Standard Gauge					Birmingham Gauge			
Gauge No.	Thickness in inches		Weight per sq. ft. in lbs.		Gauge No.	Thickness in inches	Weight per sq. ft. in lbs.	
	Fractions	Decimals	Iron	Steel			Iron	Steel
7-0's	1–2	.5	20.00	20.4				
6-0's	15–32	.46875	18.75	19.125				
5-0's	7–16	.4375	17.50	17.85				
0000	13–32	.40625	16.25	16.575	0000	.454	18.22	18.46
000	3–8	.375	15.	15.30	000	.425	17.05	17.28
00	11–32	.34375	13.75	14.025	00	.38	15.25	15.45
0	5–16	.3125	12.50	12.75	0	.34	13.64	13.82
1	9–32	.28125	11.25	11.475	1	.3	12.04	12.20
2	17–64	.265625	10.625	10.8375	2	.284	11.40	11.55
3	1–4	.25	10.	10.2	3	.259	10.39	10.53
4	15–64	.234375	9.375	9.5625	4	.238	9.55	9.68
5	7–32	.21875	8.75	8.925	5	.22	8.83	8.95
6	13–64	.203125	8.125	8.2875	6	.203	8.15	8.25
7	3–16	.1875	7.5	7.65	7	.18	7.22	7.32
8	11–64	.171875	6.875	7.0125	8	.165	6.62	6.71
9	5–32	.15625	6.25	6.375	9	.148	5.94	6.02
10	9–64	.140625	5.625	5.7375	10	.134	5.38	5.45
11	1–8	.125	5.	5.1	11	.12	4.82	4.88
12	7–64	.109375	4.375	4.4625	12	.109	4.37	4.43
13	3–32	.09375	3.75	3.825	13	.095	3.81	3.86
14	5–64	.078125	3.125	3.1875	14	.083	3.33	3.37
15	9–128	.0703125	2.8125	2.86875	15	.072	2.89	2.93
16	1–16	.0625	2.5	2.55	16	.065	2.61	2.64
17	9–160	.05625	2.25	2.295	17	.058	2.33	2.36
18	1–20	.05	2.	2.04	18	.049	1.97	1.99
19	7–160	.04375	1.75	1.785	19	.042	1.69	1.71
20	3–80	.0375	1.50	1.53	20	.035	1.40	1.42
21	11–320	.034375	1.375	1.4025	21	.032	1.28	1.30
22	1–32	.03125	1.25	1.275	22	.028	1.12	1.14
23	9–320	.028125	1.125	1.1475	23	.025	1.00	1.02
24	1–40	.025	1.	1.02	24	.022	.883	.895
25	7–320	.021875	.875	.8925	25	.02	.803	.813
26	3–160	.01875	.75	.765	26	.018	.722	.733
27	11–640	.0171875	.6875	.70125	27	.016	.642	.651
28	1–64	.015625	.625	.6375	28	.014	.562	.569
29	9–640	.0140625	.5625	.57375	29	.013	.....	.....
30	1–80	.0125	.5	.51	30	.012	.....	.....
31	7–640	.010385	.4375	.44625	31	.01	.....	.....
32	13–1280	.01015625	.40625	.414375	32	.009	.....	.....
33	3–320	.009375	.375	.3825	33	.008	.....	.....
34	11–1280	.00859375	.34375	.350625	34	.007	.....	.....
35	5–640	.0078125	.3125	.31875	35	.005	.....	.....
36	9–1280	.00703125	.28125	.286875	36	.004	.....	.....
37	17–2560	.00664062	.265625	.2709375	37	.....	.....	.....
38	1–160	.00625	.25	.255	.....	.....	.....	.....

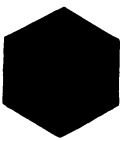
WEIGHTS OF FLAT IRON

For price list of Flat Steel see page 83.

Width in inches	Lbs. per Lineal Foot — Thickness in inches									
	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	7/8	1
1/2	.211	.361	.422	.491	.634	.....	.....	.....	.....	.....
5/8	.26	.42	.51	.64	.784	.9	.....	.....	.....	.....
3/4	.316	.471	.633	.79	.95	1.26	1.58	.....	.....	.....
7/8	.37	.551	.73	.915	1.09	1.46	1.82	2.19	.....	.....
1	.421	.623	.832	1.04	1.25	1.67	2.08	2.5	2.92	.....
1 1/8	.475	.7	.94	1.17	1.41	1.88	2.34	2.81	3.28	3.75
1 1/4	.524	.782	1.04	1.3	1.56	2.08	2.6	3.12	3.64	4.17
1 3/8	.574	.86	1.15	1.43	1.72	2.29	2.86	3.44	4.01	4.58
1 1/2	.631	.94	1.25	1.56	1.88	2.5	3.13	3.75	4.38	5.
1 5/8	.682	1.02	1.35	1.69	2.03	2.71	3.38	4.01	4.74	5.42
1 3/4	.73	1.09	1.4	1.82	2.19	2.92	3.65	4.37	5.1	5.83
2	.831	1.24	1.67	2.08	2.5	3.33	4.17	5.	5.83	6.67
2 1/4	.945	1.41	1.88	2.34	2.81	3.75	4.69	5.63	6.51	7.5
2 1/2	1.04	1.56	2.08	2.6	3.12	4.17	5.21	6.25	7.29	8.33
2 3/4	1.14	1.72	2.29	2.86	3.44	4.59	5.73	6.87	8.02	9.17
3	1.25	1.87	2.5	3.12	3.75	5.	6.25	7.5	8.75	10.
3 1/4	1.35	2.03	2.71	3.38	4.07	5.42	6.77	8.12	9.48	10.83
3 1/2	1.46	2.19	2.92	3.65	4.38	5.83	7.29	8.75	10.21	11.61
3 3/4	1.56	2.34	3.12	3.9	4.69	6.25	7.81	9.37	10.94	12.5
4	1.67	2.5	3.33	4.17	5.	6.67	8.33	10.	11.67	13.33
4 1/2	1.87	2.81	3.75	4.69	5.63	7.5	9.38	11.25	13.13	15.6
5	2.08	3.13	4.17	5.21	6.25	8.34	10.42	12.5	14.59	16.67
6	2.5	3.75	5.	6.25	7.5	10.	12.5	15.	17.5	20.

NOTE—The above weights will apply to steel bars if multiplied by 1.02.

WEIGHT OF COLD ROLLED STEEL HEXAGONS



For price list of Hexagon Steel see page 83.

*Size inches	Weight per foot, lbs.	*Size inches	Weight per foot, lbs.	*Size inches	Weight per foot, lbs.
1/4	.195	1	2.94	1 3/4	9.00
9/16	.29	1 1/16	3.33	1 7/8	10.32
3/8	.43	1 1/8	3.73	2	11.78
7/16	.56	1 3/16	4.15	2 1/8	13.30
1/2	.73	1 1/4	4.60	2 1/4	14.91
9/16	.93	1 5/16	5.07	2 3/8	16.61
5/8	1.15	1 3/8	5.57	2 1/2	18.40
11/16	1.40	1 7/16	6.07	2 5/8	20.29
3/4	1.66	1 1/2	6.62	2 3/4	22.27
13/16	1.91	1 9/16	7.17	3	26.50
7/8	2.25	1 5/8	7.76	3 1/4	31.10
15/16	2.58	1 11/16	8.37	3 1/2	36.07

*"Size" for Hexagons is width across flats.

WEIGHTS OF ROUND AND SQUARE STEEL BARS

IN LBS. PER LINEAL FOOT

(One cubic foot of steel weighing 489.6 pounds)

Size Inches	● Bar	■ Bar	Size Inches	● Bar	■ Bar	Size Inches	● Bar	■ Bar
0	.....	.....	3	24.03	30.60	6	96.14	122.4
1/16	.0104	.0133	1/16	25.04	31.89	1/16	98.14	125.0
1/8	.0417	.0531	1/8	26.08	33.20	1/8	100.2	127.6
3/16	.0938	.1195	3/16	27.13	34.55	3/16	102.2	130.2
1/4	.1669	.2123	1/4	28.20	35.92	1/4	104.3	132.8
5/16	.2608	.3333	5/16	29.30	37.31	5/16	106.4	135.5
3/8	.3756	.4782	3/8	30.42	38.73	3/8	108.5	138.2
7/16	.5111	.6508	7/16	31.56	40.18	7/16	110.7	140.9
1/2	.6676	.8500	1/2	32.71	41.65	1/2	112.8	143.6
9/16	.8449	1.076	9/16	33.90	43.14	9/16	114.9	146.5
5/8	1.043	1.328	5/8	35.09	44.68	5/8	117.2	149.2
11/16	1.262	1.608	11/16	36.31	46.24	11/16	119.4	152.1
3/4	1.502	1.913	3/4	37.56	47.82	3/4	121.7	154.9
13/16	1.763	2.245	13/16	38.81	49.42	13/16	123.9	157.8
7/8	2.044	2.603	7/8	40.10	51.05	7/8	126.2	160.8
15/16	2.347	2.989	15/16	41.40	52.71	15/16	128.5	163.6
1	2.670	3.400	4	42.73	54.40	7	130.9	166.6
1/16	3.014	3.838	1/16	44.07	56.11	1/8	135.6	172.6
1/8	3.379	4.303	1/8	45.44	57.85	1/4	140.4	178.7
3/16	3.766	4.795	3/16	46.83	59.62	3/8	145.3	184.9
1/4	4.173	5.312	1/4	48.24	61.41	1/2	150.2	191.3
5/16	4.600	5.857	5/16	49.66	63.23	5/8	155.2	197.7
3/8	5.019	6.428	3/8	51.11	65.08	3/4	160.3	204.2
7/16	5.518	7.026	7/16	52.58	66.95	7/8	165.6	210.8
1/2	6.008	7.650	1/2	54.07	68.85	8	171.0	217.6
9/16	6.520	8.301	9/16	55.59	70.78	1/8	176.3	224.5
5/8	7.051	8.978	5/8	57.12	72.73	1/4	181.8	231.4
11/16	7.604	9.682	11/16	58.67	74.70	3/8	187.3	238.5
3/4	8.178	10.41	3/4	60.25	76.71	1/2	193.0	245.6
13/16	8.773	11.17	13/16	61.84	78.74	5/8	198.7	252.9
7/8	9.388	11.95	7/8	63.46	80.81	3/4	204.4	260.3
15/16	10.02	12.76	15/16	65.10	82.89	7/8	210.3	267.9
2	10.68	13.60	5	66.76	85.00	9	216.3	275.4
1/16	11.36	14.46	1/16	68.44	87.14	1/8	222.4	283.2
1/8	12.06	15.35	1/8	70.14	89.30	1/4	228.5	290.9
3/16	12.78	16.27	3/16	71.86	91.49	3/8	234.7	298.9
1/4	13.52	17.22	1/4	73.60	93.72	1/2	241.0	306.8
5/16	14.28	18.19	5/16	75.37	95.96	5/8	247.4	315.0
3/8	15.07	19.18	3/8	77.15	98.23	3/4	253.9	323.2
7/16	15.86	20.20	7/16	78.95	100.5	7/8	260.4	331.6
1/2	16.69	21.25	1/2	80.77	102.8	10	267.0	340.0
9/16	17.53	22.33	9/16	82.62	105.2	1/4	280.6	357.2
5/8	18.40	23.43	5/8	84.49	107.6	1/2	294.4	374.9
11/16	19.29	24.56	11/16	86.38	110.0	3/4	308.6	392.9
3/4	20.20	25.00	3/4	88.29	112.4	11	323.1	411.4
13/16	21.12	26.90	13/16	90.22	114.9	1/4	337.9	430.3
7/8	22.07	28.10	7/8	92.17	117.4	1/2	353.1	449.6
15/16	23.04	29.34	15/16	94.14	119.9	3/4	368.6	469.4

NOTE—To correct the above weights for iron bars, multiply by the decimal .981.

For price list of square steel bars see page 83.
For price list of steel shafting see page 79.

GAUGES OF METAL

Various Standards Compared

No. of Gauge	U. S. Standard Gauge, Inches	Old English, Inches	Washburn & Moen, Inches	Birmingham or Stubs, Inches	American or Brown & Sharpe, Inches
7-0's	.5	.....	.....	.....	.....
6-0's	.46875	.....	.....	.....	.....
5-0's	.4375	.....	.....	.....	.....
0000	.40625	.454	.393	.454	.460
000	.375	.425	.362	.425	.40964
00	.34375	.380	.331	.380	.36480
0	.3125	.340	.307	.340	.32495
1	.28125	.300	.283	.300	.28930
2	.265625	.284	.263	.284	.25763
3	.25	.259	.244	.259	.22942
4	.234375	.238	.225	.238	.20431
5	.21875	.220	.207	.220	.18194
6	.203125	.203	.192	.203	.16202
7	.1875	.180	.177	.180	.14428
8	.171875	.165	.162	.165	.12849
9	.15625	.148	.148	.148	.11443
10	.140625	.134	.135	.134	.10189
11	.125	.120	.120	.120	.09074
12	.109375	.109	.105	.109	.08081
13	.09375	.095	.092	.095	.07196
14	.078125	.083	.080	.083	.06408
15	.0703125	.072	.072	.072	.05707
16	.0625	.065	.063	.065	.05082
17	.05625	.058	.054	.058	.04525
18	.05	.049	.047	.049	.04030
19	.04375	.040	.041	.042	.03589
20	.0375	.035	.035	.035	.03196
21	.034375	.0315	.032	.032	.02846
22	.03125	.0295	.028	.028	.025347
23	.028125	.027	.025	.025	.022571
24	.025	.025	.023	.022	.0201
25	.021875	.023	.020	.020	.0179
26	.01875	.0205	.018	.018	.01594
27	.0171875	.01875	.017	.016	.014195
28	.015625	.0165	.016	.014	.012641
29	.0140625	.0155	.015	.013	.011257
30	.0125	.01375	.014	.012	.010025
31	.010985	.01225	.0135	.010	.008928
32	.01045625	.01125	.013	.009	.00795
33	.009375	.01025	.011	.008	.00708
34	.00859375	.0095	.010	.007	.0063
35	.0078125	.009	.0095	.005	.00561
36	.00703125	.0075	.009	.004	.005
37	.00664062	.0065	.0085	.....	.00445
38	.00625	.00575	.008	.....	.003965
39	.....	.005	.0075	.....	.003531
40	.....	.0045	.007	.....	.003144

Elevator buckets are measured by the U. S. Standard Gauge, the gauge used by rolling mills for sheet steel, but when metal is heavier than No. 12 it is designated as steel plate and measured by Birmingham gauge.

PIPE

DIMENSIONS AND WEIGHTS—WROUGHT IRON AND STEEL PIPE

Diameter			Nominal Thickness Inches	Transverse Areas		Length of Pipe per Square Foot of		Nominal Weight per Foot Lbs.	Number of Threads per in. of Screw
Nominal Internal Inches	Actual External Inches	Approximate Internal Dia. Inches		External Sq. Ins.	Internal Sq. Ins.	External Surface Feet	Internal Surface Feet		
⅛	.405	.270	.068	.129	.0568	9.440	14.15	.241	27
¼	.540	.364	.088	.229	.1041	7.075	10.49	.42	18
⅜	.675	.494	.091	.358	.1909	5.657	7.76	.559	18
½	.840	.623	.109	.554	.3039	4.547	6.15	.837	14
¾	1.050	.824	.113	.866	.5333	3.637	4.635	1.115	14
1	1.315	1.048	.134	1.358	.8609	2.904	3.645	1.668	11½
1¼	1.660	1.380	.140	2.164	1.496	2.301	2.768	2.244	11½
1½	1.900	1.611	.145	2.835	2.038	2.010	2.371	2.678	11½
2	2.375	2.067	.154	4.430	3.356	1.608	1.848	3.609	11½
2½	2.875	2.468	.204	6.492	4.780	1.328	1.547	5.739	8
3	3.500	3.067	.217	9.621	7.388	1.091	1.245	7.536	8
3½	4.	3.548	.226	12.566	9.887	.955	1.077	9.001	8
4	4.5	4.026	.237	15.904	12.730	.849	.949	10.665	8
4½	5.	4.508	.246	19.635	15.961	.764	.848	12.34	8
5	5.563	5.045	.259	24.306	19.985	.687	.757	14.502	8
6	6.625	6.065	.280	34.472	28.886	.577	.630	18.762	8
7	7.625	7.023	.301	45.664	38.743	.501	.544	23.271	8
8	8.625	7.982	.322	58.426	50.021	.443	.478	28.177	8
9	9.625	8.937	.344	72.76	62.722	.397	.427	33.701	8
10	10.75	10.019	.366	90.763	78.822	.355	.381	40.065	8
11	11.75	11.000	.375	108.434	95.034	.325	.348	45.950	8
12	12.75	12.000	.375	127.677	113.098	.299	.319	48.985	8
EXTRA STRONG PIPE									
⅛	.405	.205	.100	.129	.033	9.433	18.632	.29	.....
¼	.540	.294	.123	.229	.068	7.075	12.986	.54	.....
⅜	.675	.421	.127	.358	.139	5.657	9.070	.74	.....
½	.840	.542	.149	.554	.231	4.547	7.046	1.09	.....
¾	1.050	.736	.157	.866	.425	3.637	5.109	1.39	.....
1	1.315	.951	.182	1.358	.710	2.904	4.016	2.17	.....
1¼	1.660	1.272	.194	2.164	1.271	2.301	3.003	3.00	.....
1½	1.900	1.494	.203	2.835	1.753	2.010	2.556	3.63	.....
2	2.375	1.933	.221	4.430	2.935	1.608	1.975	5.02	.....
2½	2.875	2.315	.280	6.492	4.209	1.328	1.649	7.67	.....
3	3.500	2.892	.304	9.621	6.569	1.091	1.328	10.25	.....
3½	4.000	3.358	.321	12.566	8.856	.955	1.137	12.47	.....
4	4.500	3.818	.341	15.904	11.449	.849	1.000	14.97	.....
4½	5.000	4.280	.360	19.635	14.387	.764	.893	18.22	.....
5	5.563	4.813	.375	24.306	18.193	.687	.793	20.54	.....
6	6.625	5.751	.437	34.472	25.976	.577	.664	28.58	.....
7	7.625	6.625	.500	45.664	34.472	.501	.598	37.67	.....
8	8.625	7.625	.500	58.426	45.664	.443	.502	43.00	.....
9	9.655	8.625	.500	72.760	58.426	.397	.443	48.25	.....
10	10.750	9.750	.500	90.763	74.662	.355	.399	54.25	.....
12	12.750	11.750	.500	127.680	108.430	.299	.325	65.00	.....
DOUBLE EXTRA STRONG PIPE									
½	.840	.244	.298	.554	.047	4.547	15.667	1.70	.....
¾	1.050	.422	.314	.866	.140	3.637	9.049	2.44	.....
1	1.315	.587	.364	1.358	.271	2.904	6.508	3.65	.....
1¼	1.660	.885	.388	2.164	.615	2.304	4.317	5.20	.....
1½	1.900	1.088	.406	2.835	.930	2.010	3.511	6.40	.....
2	2.375	1.491	.442	4.430	1.744	1.608	2.561	9.02	.....
2½	2.875	1.755	.560	6.492	2.419	1.328	2.176	13.68	.....
3	3.500	2.284	.608	9.621	4.097	1.091	1.672	18.56	.....
3½	4.000	2.716	.642	12.566	5.794	.955	1.406	22.75	.....
4	4.500	3.136	.682	15.904	7.724	.849	1.217	27.48	.....
4½	5.000	3.564	.718	19.635	9.976	.764	1.070	32.53	.....
5	5.563	4.063	.750	24.306	12.965	.687	.940	38.12	.....
6	6.625	4.875	.875	34.472	18.665	.577	.784	53.11	.....
7	7.625	5.875	.875	45.664	27.109	.501	.650	62.38	.....
8	8.625	6.875	.875	58.426	37.122	.443	.550	71.62	.....

WEIGHTS OF STEEL ANGLES (With Fillet)

IN POUNDS PER LINEAL FOOT

Size in Inches	Thickness in Inches														
	1/8	3/16	1/4	5/16	3/8	7/16	1/2	9/16	5/8	11/16	3/4	13/16	7/8	15/16	1
5/8x 5/8	0.5	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3/4x 3/4	0.6	0.9	....	....	....	....	....	....	....	....	....	....	....	....	....
7/8x 7/8	0.7	1.0	....	....	....	....	....	....	....	....	....	....	....	....	....
1 x 5/8	0.6	0.9	....	....	....	....	....	....	....	....	....	....	....	....	....
1 x 3/4	0.7	1.0	....	....	....	....	....	....	....	....	....	....	....	....	....
1 x1	0.8	1.2	1.5	....	....	....	....	....	....	....	....	....	....	....	....
1 1/8x1 1/8	0.9	1.3	....	....	....	....	....	....	....	....	....	....	....	....	....
1 1/4x1 1/4	1.1	1.5	2.0	2.4	....	....	....	....	....	....	....	....	....	....	....
1 3/8x 7/8	0.9	1.3	....	....	....	....	....	....	....	....	....	....	....	....	....
1 3/8x1	1.0	....	1.9	....	....	....	....	....	....	....	....	....	....	....	....
1 1/2x1 1/2	1.3	1.8	2.4	2.9	3.4	....	....	....	....	....	....	....	....	....	....
1 3/4x1 3/4	1.4	2.2	2.8	3.4	4.0	4.6	....	....	....	....	....	....	....	....	....
2 x1 3/8	....	2.1	2.7	....	....	....	....	....	....	....	....	....	....	....	....
2 x1 1/2	....	2.1	2.8	3.4	4.0	....	....	....	....	....	....	....	....	....	....
2 x2	1.7	2.5	3.2	4.0	4.7	5.3	....	....	....	....	....	....	....	....	....
2 1/4x1 1/2	....	2.3	3.0	3.7	4.4	5.0	5.6	....	....	....	....	....	....	....	....
2 1/4x2 1/4	1.9	2.8	3.7	4.5	5.3	6.1	6.8	....	....	....	....	....	....	....	....
2 1/2x1 1/2	....	2.4	3.2	3.9	....	....	....	....	....	....	....	....	....	....	....
2 1/2x1 3/4	....	2.6	3.4	....	....	....	....	....	....	....	....	....	....	....	....
2 1/2x2	....	2.8	3.7	4.5	5.3	6.1	6.8	....	....	....	....	....	....	....	....
2 1/2x2 1/2	2.1	3.1	4.1	5.0	5.9	6.8	7.7	....	....	....	....	....	....	....	....
2 3/4x2 3/4	2.3	3.4	4.5	5.6	6.6	7.6	8.5	....	....	....	....	....	....	....	....
3 x2	....	3.1	4.1	5.0	5.9	6.8	7.7	....	....	....	....	....	....	....	....
3 x2 1/2	....	3.4	4.5	5.6	6.6	7.6	8.5	9.5	....	....	....	....	....	....	....
3 x3	2.5	3.7	4.9	6.1	7.2	8.3	9.4	10.4	11.5	....	....	....	....	....	....
3 1/4x2	....	....	4.3	5.3	6.3	7.2	8.1	9.0	....	....	....	....	....	....	....
3 1/4x3 1/4	....	....	....	....	7.85	....	....	....	....	....	....	....	....	....	....
3 1/2x2 1/2	....	....	4.9	6.1	7.2	8.3	9.4	10.4	11.5	12.5	....	....	....	....	....
3 1/2x3	....	....	....	6.6	7.9	9.1	10.2	11.4	12.5	13.6	14.7	15.8	....	....	....
3 1/2x3 1/2	....	....	5.8	7.2	8.5	9.8	11.1	12.4	13.6	14.8	16.0	17.1	....	....	....
4 x3	....	....	....	7.2	8.5	9.8	11.1	12.4	13.6	14.8	16.0	17.1	....	....	....
4 x3 1/2	....	....	....	7.7	9.1	10.6	11.9	13.3	14.7	16.0	17.3	....	....	....	....
4 x4	....	5.2	6.6	8.2	9.8	11.3	12.8	14.3	15.7	17.1	18.5	19.9	....	....	....
4 1/2x3	....	....	....	7.7	9.1	10.6	11.9	13.3	14.7	16.0	17.3	18.5	....	....	....
5 x3	....	....	....	8.2	9.8	11.3	12.8	14.3	15.7	17.1	18.5	19.9	....	....	....
5 x3 1/2	....	....	....	8.7	10.4	12.0	13.6	15.2	16.8	18.3	19.8	21.3	22.7	....	....
5 x4	....	....	....	....	11.0	12.8	14.5	16.2	17.8	19.5	21.1	22.7	24.2	....	....
5 x5	....	....	....	....	12.3	14.3	16.2	18.1	20.0	21.8	23.6	25.4	27.2	28.9	30.6
6 x3 1/2	....	....	....	....	11.7	13.5	15.3	17.1	18.9	20.6	22.4	24.0	25.7	27.3	28.9
6 x4	....	....	....	....	12.3	14.3	16.2	18.1	20.0	21.8	23.6	25.4	27.2	28.9	30.6
6 x6	....	....	....	....	14.9	17.2	19.6	21.9	24.2	26.5	28.7	31.0	33.1	35.3	37.4
7 x3 1/2	....	....	....	....	....	15.0	17.0	19.1	21.0	23.0	24.9	26.8	28.7	30.5	32.3
8 x8	....	....	....	....	....	....	26.4	29.6	32.7	35.8	38.9	42.0	45.0	48.1	51.0

WEIGHTS OF STEEL TEES

IN POUNDS PER LINEAL FOOT. ALL DIMENSIONS GIVEN IN INCHES

SIZE Flange first then Stem	Thickness of Flange at Edge							SIZE Flange first then Stem	Thickness, Flange at Edge			
	1/8	3/16	1/4	5/16	3/8	7/16	1/2		5/16	3/8	7/16	1/2
1 x1	1.0	1.3	.....	.....	.....	.....	.....	3 1/2x3	*7.7	8.7	.....	11.0
1 1/4x1 1/4	.....	1.7	2.1	.....	.....	.....	.....	3 1/2x3 1/2	.....	9.3	.....	11.9
1 1/2x1 1/2	.....	2.0	2.6	.....	.....	.....	.....	3 1/2x4	.....	10.0	.....	12.8
1 3/4x1 3/4	.....	2.1	3.2	.....	.....	.....	.....	4 x2	6.7	7.9	.....	.....
2 x1 1/2	.....	.....	3.2	.....	.....	.....	.....	4 x2 1/2	7.4	8.7	.....	.....
2 x2	.....	.....	3.7	4.4	.....	.....	.....	4 x3	.....	9.3	.....	.....
2 1/4x2 1/4	.....	.....	4.2	5.0	.....	.....	.....	4 x4	.....	10.9	.....	13.9
2 1/2x1 1/4	.....	3.0	.....	.....	.....	.....	.....	4 x4 1/2	.....	11.6	.....	14.8
2 1/2x2 1/2	.....	.....	.....	5.6	6.5	.....	.....					
2 1/2x2 3/4	.....	.....	.....	5.9	6.8	.....	.....	4 x5	.....	12 3	.....	15.7
2 1/2x3	.....	.....	.....	6.2	7.2	.....	.....	4 1/2x2 1/2	8.0	9.3	.....	.....
2 3/4x2	.....	.....	.....	7.4	Stem 3/4" thick, straight			4 1/2x3	8.6	10.0	.....	.....
								4 1/2x3 1/2	.....	.....	**15.9	.....
3 x2 1/2	.....	.....	.....	6.2	7.2	.....	.....					
3 x3	.....	.....	.....	6.8	7.9	9.0	10.1	5 x2 1/2	.....	†11.0	.....	.....
3 x3 1/2	.....	.....	.....	.....	8.6	9.8	11.0	5 x3	.....	.....	.....	††13.6
3 x4	.....	.....	.....	.....	9.3	10.6	11 9					

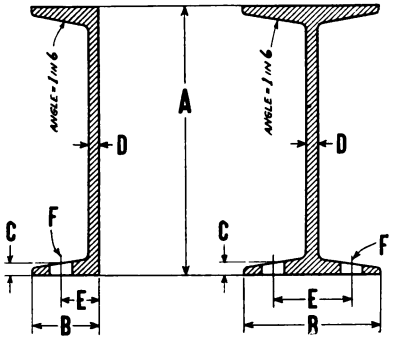
*Stem is 3/8" thick not tapered. **Stem is tapered 11/16 to 7/8" thick.
†Stem is tapered 7/16 to 21/32" thick. ††Stem is tapered 13/32 to 5/8" thick.

STEEL CHANNELS AND I-BEAMS

TABLE OF WEIGHTS, DIMENSIONS AND PUNCHING. (Carnegie Std.)

(ALL DIMENSIONS GIVEN IN INCHES)

CHANNELS I-BEAMS



CHANNELS

A	W'ght. per ft. lbs.	B	C Grip	D	E	F Bolt or Rivet
3	**4.00**	1.41	¼	.170	11/16	3/8
"	5.00	1.50	"	.264	"	"
"	6.00	1.60	"	.362	"	"
4	**5.25**	1.58	9/32	.180	1	½
"	6.25	1.65	"	.252	"	"
"	7.25	1.73	"	.325	"	"
5	**6.50**	1.75	5/16	.190	"	"
"	9.00	1.89	"	.330	1¼	"
"	11.50	2.04	"	.477	"	"
6	**8.00**	1.92	11/32	.200	1⅛	5/8
"	10.50	2.04	"	.318	"	"
"	13.00	2.16	"	.440	1⅜	"
"	15.50	2.28	"	.563	"	"
7	**9.75**	2.09	"	.210	1¼	"
"	12.25	2.20	"	.318	"	"
"	14.75	2.30	"	.423	"	"
"	17.25	2.41	3/8	.528	1½	"
"	19.75	2.51	"	.633	"	"
8	**11.25**	2.26	"	.220	1¼	¾
"	13.75	2.35	"	.307	"	"
"	16.25	2.44	"	.399	1½	"
"	18.75	2.53	"	.490	"	"
"	21.25	2.62	"	.582	"	"
9	**13.25**	2.43	13/32	.230	1⅜	"
"	15.00	2.49	"	.288	"	"
"	20.00	2.65	3/8	.452	1¾	"
"	25.00	2.82	"	.615	"	"
10	**15.00**	2.60	7/16	.240	1½	"
"	20.00	2.74	"	.382	"	"
"	25.00	2.89	3/8	.529	2	"
"	30.00	3.04	"	.676	"	"
"	35.00	3.18	"	.823	"	"
12	**20.50**	2.94	15/32	.280	1¾	"
"	25.00	3.05	"	.390	"	"
"	30.00	3.17	"	.513	2	"
"	35.00	3.30	"	.636	"	"
"	40.00	3.42	"	.758	"	"
15	**33.00**	3.40	21/32	.400	1⅞	"
"	35.00	3.43	"	.426	"	"
"	40.00	3.52	"	.524	"	"
"	45.00	3.62	5/8	.622	2¼	"
"	50.00	3.72	"	.720	"	"
"	55.00	3.82	"	.818	"	"

I-BEAMS

A	W'ght. per ft. lbs.	B	C Grip	D	E	F Bolt or Rivet
3	**5.50**	2.33	¼	.170	1 7/16	3/8
"	6.50	2.42	"	.263	"	"
"	7 50	2.52	"	.361	"	"
4	**7.50**	2.66	9/32	.190	1½	½
"	8.50	2.73	"	.263	"	"
"	9.50	2.81	"	.337	"	"
"	10.50	2.88	"	.410	"	"
5	**9.75**	3.00	5/16	.210	1¾	"
"	12.25	3.15	"	.357	"	"
"	14.75	3.29	"	.504	"	"
6	**12.25**	3.33	11/32	230	2	5/8
"	14.75	3.45	"	.352	"	"
"	17.25	3.58	"	.475	"	"
7	**15.00**	3.66	3/8	.250	2¼	"
"	17.50	3.76	"	.353	"	"
"	20.00	3.87	"	.458	"	"
8	**18.00**	4.00	13/32	.270	"	¾
"	20.50	4.09	"	.357	"	"
"	23.00	4.18	"	.449	"	"
"	25.50	4.27	"	.541	"	"
9	**21.00**	4.33	7/16	.290	2½	"
"	25.00	4.45	"	.406	"	"
"	30.00	4.61	"	.569	"	"
"	35.00	4.77	"	.732	"	"
10	**25.00**	4.66	15/32	.310	2 5/8	"
"	30.00	4.81	"	.455	"	"
"	35.00	4.95	"	.602	"	"
"	40.00	5.10	"	.749	"	"
12	**31.50**	5.00	17/32	.350	2¾	"
"	35.00	5.09	"	.436	"	"
"	**40.00**	5.25	21/32	.460	3	"
"	45.00	5.37	"	.576	"	"
"	50.00	5.49	"	.699	"	"
"	55.00	5.61	"	.822	"	"
15	**42.00**	5.50	5/8	.410	"	"
"	45.00	5.55	"	.460	"	"
"	50.00	5.65	"	.558	"	"
"	55.00	5.75	"	.656	"	"
"	**60.00**	6.00	11/16	.590	3¼	"
"	65.00	6.09	"	.686	"	"
"	70.00	6.19	"	.784	"	"
"	75.00	6.29	"	.882	"	"
"	**80.00**	6.40	1 1/32	.810	3¾	7/8
"	85.00	6.48	"	.889	"	"
"	90.00	6.58	"	.987	"	"
"	95.00	6.68	"	1.085	"	"
"	100.00	6.77	"	1.184	"	"
18	**55.00**	6.00	11/32	.460	3¼	"
"	60.00	6.10	"	.555	"	"
"	65.00	6.18	"	.637	"	"
"	70.00	6.26	"	.719	"	"
20	**65.00**	6.25	25/32	.500	3½	"
"	70.00	6 33	"	.575	"	"
"	75.00	6.40	"	.649	"	"
"	**80.00**	7.00	29/32	.600	4	"
"	85.00	7.06	"	.663	"	"
"	90.00	7.14	"	.737	"	"
"	95.00	7.21	"	.810	"	"
"	100.00	7.28	"	.884	"	"
24	**80.00**	7.00	27/32	.500	"	"

Weights given in black face type are standard sizes.

LUMBER

BOARD FEET CONTENTS OF STANDARD SIZES

The figures in table below give the board feet contained in various lengths of the standard size pieces listed in left hand column.

The contents of any size not listed may easily be obtained by either dividing or multiplying the sizes which are given.

Size of Piece in Inches	Length of Piece in Feet							
	12 ft.	14 ft.	16 ft.	18 ft.	20 ft.	22 ft.	24 ft.	26 ft.
1 x 4	4	4⅓	5⅓	6	6⅔	7⅓	8	8⅔
1 x 6	6	7	8	9	10	11	12	13
1 x 8	8	9⅓	10⅔	12	13⅓	14⅔	16	17⅓
1 x 10	10	11⅔	13⅓	15	16⅔	18⅓	20	21⅔
1 x 12	12	14	16	18	20	22	24	26
1 x 14	14	16⅓	18⅔	21	23⅓	25⅔	28	30⅓
1 x 16	16	18⅔	21⅓	24	26⅔	29⅓	32	34⅔
2 x 3	6	7	8	9	10	11	12	13
2 x 4	8	9⅓	10⅔	12	13⅓	14⅔	16	17⅓
2 x 6	12	14	16	18	20	22	24	26
2 x 8	16	18⅔	21⅓	24	26⅔	29⅓	32	34⅔
2 x 10	20	23⅓	26⅔	30	33⅓	36⅔	40	43⅓
2 x 12	24	28	32	36	40	44	48	52
2 x 14	28	32⅔	37⅓	42	46⅔	51⅓	56	60⅔
2 x 16	32	37⅓	42⅔	48	53⅓	58⅔	64	69⅓
3 x 4	12	14	16	18	20	22	24	26
3 x 6	18	21	24	27	30	33	36	39
3 x 8	24	28	32	36	40	44	48	52
3 x 10	30	35	40	45	50	55	60	65
3 x 12	36	42	48	54	60	66	72	78
3 x 14	42	49	56	63	70	77	84	91
3 x 16	48	56	64	72	80	88	96	104
4 x 4	16	18⅔	21⅓	24	26⅔	29⅓	32	34⅔
4 x 6	24	28	32	36	40	44	48	52
4 x 8	32	37⅓	42⅔	48	53⅓	58⅔	64	69⅓
4 x 10	40	46⅔	53⅓	60	66⅔	73⅓	80	86⅔
4 x 12	48	56	64	72	80	88	96	104
4 x 14	56	65⅓	74⅔	84	93⅓	102⅔	112	121⅓
4 x 16	64	74⅔	85⅓	96	106⅔	117⅓	128	138⅔
6 x 6	36	42	48	54	60	66	72	78
6 x 8	48	56	64	72	80	88	96	104
6 x 10	60	70	80	90	100	110	120	130
6 x 12	72	84	96	108	120	132	144	156
6 x 14	84	98	112	126	140	154	168	182
6 x 16	96	112	128	144	160	176	192	208
8 x 8	64	74⅔	85⅓	96	106⅔	117⅓	128	138⅔
8 x 10	80	93⅓	106⅔	120	133⅓	146⅔	160	173⅓
8 x 12	96	112	128	144	160	176	192	208
8 x 14	112	130⅔	149⅓	168	186⅔	205⅓	224	242⅔
8 x 16	128	149⅓	170⅔	192	213⅓	234⅔	256	277⅓
10 x 10	100	116⅔	133⅓	150	166⅔	183⅓	200	216⅔
10 x 12	120	140	160	180	200	220	240	260
10 x 14	140	163⅓	186⅔	210	233⅓	256⅔	280	303⅓
10 x 16	160	186⅔	213⅓	240	266⅔	293⅓	320	346⅔
12 x 12	144	168	192	216	240	264	288	312
12 x 14	168	196	224	252	280	308	336	364
12 x 16	192	224	256	288	320	352	384	416
14 x 14	196	228⅔	261⅓	294	326⅔	359⅓	392	424⅔
14 x 16	224	261⅓	298⅔	336	373⅓	410⅔	448	485⅓
16 x 16	256	298⅔	341⅓	384	426⅔	469⅓	512	554⅔

For greater lengths see next page.

LUMBER (*Continued*)

BOARD FEET CONTENTS OF STANDARD SIZES

Size of Piece in Inches	Length of Piece in Feet						
	28 ft.	30 ft.	32 ft.	34 ft.	36 ft.	38 ft.	40 ft.
1 x 4	9⅓	10	11	11⅓	12	12⅔	13
1 x 6	14	15	16	17	18	19	20
1 x 8	18⅔	20	21⅓	22⅔	24	25⅓	26⅔
1 x 10	23⅓	25	26⅔	28⅓	30	31⅔	33⅓
1 x 12	28	30	32	34	36	38	40
1 x 14	32⅔	35	37⅓	39⅔	42	44⅓	46⅔
1 x 16	37⅓	40	42⅔	45⅓	48	50⅔	53⅓
2 x 3	14	15	16	17	18	19	20
2 x 4	18⅔	20	21⅓	22⅔	24	25⅓	26⅔
2 x 6	28	30	32	34	36	38	40
2 x 8	37⅓	40	42⅔	45⅓	48	50⅔	53⅓
2 x 10	46⅔	50	53⅓	56⅔	60	63⅓	66⅔
2 x 12	56	60	64	68	72	76	80
2 x 14	65⅓	70	72⅔	79⅓	84	88⅔	93⅓
2 x 16	74⅔	80	85⅓	90⅔	96	101⅓	106⅔
3 x 4	28	30	32	34	36	38	40
3 x 6	42	45	48	51	54	57	60
3 x 8	56	60	64	68	72	76	80
3 x 10	70	75	80	85	90	95	100
3 x 12	84	90	96	102	108	114	120
3 x 14	98	105	112	119	126	133	140
3 x 16	112	120	128	136	144	152	160
4 x 4	37⅓	40	42⅔	45⅓	48	50⅔	53⅓
4 x 6	56	60	64	68	72	76	80
4 x 8	74⅔	80	85⅓	90⅔	96	101⅓	106⅔
4 x 10	93⅓	100	106⅔	113⅓	120	126⅔	133⅓
4 x 12	112	120	128	136	144	152	160
4 x 14	130⅔	140	149⅓	158⅔	168	177⅓	186⅔
4 x 16	149⅓	160	170⅔	181⅓	192	202⅔	213⅓
6 x 6	84	90	96	102	108	114	120
6 x 8	112	120	128	136	144	152	160
6 x 10	140	150	160	170	180	190	200
6 x 12	168	180	192	204	216	228	240
6 x 14	196	210	224	238	252	266	280
6 x 16	224	240	256	272	288	304	320
8 x 8	149⅓	160	170⅔	181⅓	192	202⅔	213⅓
8 x 10	186⅔	200	213⅓	226⅔	240	253⅓	266⅔
8 x 12	224	240	256	272	288	304	320
8 x 14	261⅓	280	298⅔	317⅓	336	354⅔	373⅓
8 x 16	298⅔	320	341⅓	362⅔	384	405⅓	426⅔
10 x 10	233⅓	250	266⅔	283⅓	300	316⅔	333⅓
10 x 12	280	300	320	340	360	380	400
10 x 14	326⅔	350	373⅓	396⅔	410	443⅓	466⅔
10 x 16	373⅓	400	426⅔	453⅓	480	506⅔	533⅓
12 x 12	336	360	384	408	432	456	480
12 x 14	392	420	448	476	504	532	560
12 x 16	448	480	512	544	576	608	640
14 x 14	457⅔	490	522⅔	555⅓	588	620⅔	653⅓
14 x 16	522⅓	560	597⅓	634⅔	672	709⅓	746⅔
16 x 16	597⅓	640	682⅔	725⅓	768	810⅔	853⅓

For shorter lengths see opposite page.

DEFINITION OF ELECTRICAL TERMS

The mechanical powers in modern industry are in final operation closely allied with all electrical matters and yet the business of mechanical engineering and manufacturing is so distinct from electrical engineering and manufacturing that we have not included any electrical data in these pages; but we give below the definition of some of the more commonly used electrical terms:

ACCUMULATOR—A term used to designate either a current accumulator, a condenser, or a storage battery.

ALTERNATING CURRENT—A current having a periodic change in direction, the product of an alternating current generator.

AMMETER—Any kind of galvanometer which measures the strength of a current in amperes.

AMPERE—The Unit of electric current—the amount of current which can pass through a circuit offering one ohm resistance, under an electromotive force of one volt.

AMPERE HOUR—An amount of current equal to one ampere flowing for one hour.

ANODE—The positive pole of an electric battery, or where the current comes out of a battery.

CATHODE—The negative pole of an electric battery—the pole at which the current re-enters battery after having passed through the circuit.

CONTINUOUS OR DIRECT CURRENT—A current flowing in one direction only.

E.M.F.—An abbreviation of "Electromotive Force."

ELECTRODE—Either one of the electric source terminals placed into a solution where electrolysis is going on.

Definition of electrical terms continued on next page.

DEFINITION OF ELECTRICAL TERMS (*Continued*)

ELECTROLYSIS—Chemical decomposition caused by the action of an electric current.

GALVANOMETER—An instrument for measuring the strength of an electric current by the deflection of an electric needle.

HORSEPOWER (ELECTRICAL)—An amount of current equal to 746 watts, or .746 kilowatts.

KILOWATTS—One thousand watts (about one and one-third horsepower.)

OHM—The practical unit of electrical resistance, a resistance which would limit the flow of a current to one ampere under an electromotive force of one volt.

OHMS LAW—The law which expresses the relation between current, electromotive force and resistance:

$$\text{Current } \frac{\text{Electromotive force}}{\text{Resistance}} \text{ or } I = \frac{E}{R}$$

$$\text{Hence } E = IR \quad \text{and} \quad R = \frac{E}{I}$$

In which I = the current measured in amperes.
E = the electromotive force measured in volts.
R = the resistance measured in ohms.

SYNCHRONOUS MOTOR—An alternating current motor which must be brought in step with the driving current to operate properly.

VOLT—The unit of electric pressure, or electromotive force. The electromotive force necessary to cause an electric current of one ampere to pass through a resistance of one ohm.

VOLT AMMETER—An instrument for measuring either or both volts and amperes in a current.

WATT—The unit of electrical power—the result of one ampere of current at a pressure of one volt, equal to 44.25 ft. lbs. per minute.

WATTMETER—An instrument for measuring the electric current and giving the reading in watts.

CIRCLES

TABLE OF DIAMETERS, CIRCUMFERENCES AND AREAS

Diam.	Circum.	Area	Diam.	Circum.	Area	Diam.	Circum.	Area
1/64	.0491	.0002	7 3/8	23.1693	42.7184	15 7/8	49.8729	197.933
1/32	.0982	.0008	7 1/2	23.5620	44.1787	16	50.2656	201.062
3/64	.1963	.0031	7 5/8	23.9547	45.6636	16 1/8	50.6583	204.216
1/16	.3927	.0123	7 3/4	24.3474	47.1731	16 1/4	51.0510	207.395
5/64	.5890	.0276	7 7/8	24.7401	48.7071	16 3/8	51.4437	210.598
1/8	.7854	.0491	8	25.1328	50.2656	16 1/2	51.8364	213.825
7/64	.9817	.0767	8 1/8	25.5255	51.8487	16 5/8	52.2291	217.077
1/4	1.1781	.1104	8 1/4	25.9182	53.4563	16 3/4	52.6218	220.354
9/64	1.3744	.1503	8 3/8	26.3109	55.0884	16 7/8	53.0145	223.655
5/32	1.5708	.1963	8 1/2	26.7036	56.7451	17	53.4072	226.981
11/64	1.7671	.2485	8 5/8	27.0963	58.4264	17 1/8	53.7999	230.331
3/8	1.9635	.3068	8 3/4	27.4890	60.1322	17 1/4	54.1926	233.706
13/64	2.1598	.3712	8 7/8	27.8817	61.8625	17 3/8	54.5853	237.105
7/32	2.3562	.4418	9	28.2744	63.6174	17 1/2	54.9780	240.529
15/64	2.5525	.5185	9 1/8	28.6671	65.3968	17 5/8	55.3707	243.977
1/2	2.7489	.6013	9 1/4	29.0598	67.2008	17 3/4	55.7634	247.450
17/64	2.9452	.6903	9 3/8	29.4525	69.0293	17 7/8	56.1561	250.948
1	3.1416	.7854	9 1/2	29.8452	70.8823	18	56.5488	254.470
1 1/8	3.5343	.9940	9 5/8	30.2379	72.7599	18 1/8	56.9415	258.016
1 1/4	3.9270	1.2272	9 3/4	30.6306	74.6621	18 1/4	57.3342	261.587
1 3/8	4.3197	1.4849	9 7/8	31.0233	76.589	18 3/8	57.7269	265.183
1 1/2	4.7124	1.7671	10	31.4160	78.540	18 1/2	58.1196	268.803
1 5/8	5.1051	2.0739	10 1/8	31.8087	80.516	18 5/8	58.5123	272.448
1 3/4	5.4978	2.4053	10 1/4	32.2014	82.516	18 3/4	58.9050	276.117
1 7/8	5.8905	2.7612	10 3/8	32.5941	84.541	18 7/8	59.2977	279.811
2	6.2832	3.1416	10 1/2	32.9868	86.590	19	59.6904	283.529
2 1/8	6.6759	3.5466	10 5/8	33.3795	88.664	19 1/8	60.0831	287.272
2 1/4	7.0686	3.9761	10 3/4	33.7722	90.763	19 1/4	60.4758	291.040
2 3/8	7.4613	4.4301	10 7/8	34.1649	92.886	19 3/8	60.8685	294.832
2 1/2	7.8540	4.9087	11	34.5576	95.033	19 1/2	61.2612	298.648
2 5/8	8.2467	5.4119	11 1/8	34.9503	97.205	19 5/8	61.6539	302.489
2 3/4	8.6394	5.9396	11 1/4	35.3430	99.402	19 3/4	62.0466	306.355
2 7/8	9.0321	6.4918	11 3/8	35.7357	101.623	19 7/8	62.4393	310.245
3	9.4248	7.0686	11 1/2	36.1284	103.869	20	62.8320	314.160
3 1/8	9.8175	7.6699	11 5/8	36.5211	106.139	20 1/8	63.2247	318.099
3 1/4	10.2102	8.2958	11 3/4	36.9138	108.434	20 1/4	63.6174	322.063
3 3/8	10.6029	8.9462	11 7/8	37.3065	110.754	20 3/8	64.0101	326.051
3 1/2	10.9956	9.6211	12	37.6992	113.098	20 1/2	64.4028	330.064
3 5/8	11.3883	10.3206	12 1/8	38.0919	115.466	20 5/8	64.7955	334.102
3 3/4	11.7810	11.0447	12 1/4	38.4846	117.859	20 3/4	65.1882	338.164
3 7/8	12.1737	11.7933	12 3/8	38.8773	120.277	20 7/8	65.5809	342.250
4	12.5664	12.5664	12 1/2	39.2700	122.719	21	65.9736	346.361
4 1/8	12.9591	13.3641	12 5/8	39.6627	125.185	21 1/8	66.3663	350.497
4 1/4	13.3518	14.1863	12 3/4	40.0554	127.677	21 1/4	66.7590	354.657
4 3/8	13.7445	15.0330	12 7/8	40.4481	130.192	21 3/8	67.1517	358.842
4 1/2	14.1372	15.9043	13	40.8408	132.733	21 1/2	67.5444	363.051
4 5/8	14.5299	16.8002	13 1/8	41.2335	135.297	21 5/8	67.9371	367.285
4 3/4	14.9226	17.7206	13 1/4	41.6262	137.887	21 3/4	68.3298	371.543
4 7/8	15.3153	18.6555	13 3/8	42.0189	140.501	21 7/8	68.7225	375.826
5	15.7080	19.6350	13 1/2	42.4116	143.139	22	69.1152	380.134
5 1/8	16.1007	20.6290	13 5/8	42.8043	145.802	22 1/8	69.5079	384.466
5 1/4	16.4934	21.6476	13 3/4	43.1970	148.490	22 1/4	69.9006	388.822
5 3/8	16.8861	22.6907	13 7/8	43.5897	151.202	22 3/8	70.2933	393.203
5 1/2	17.2788	23.7583	14	43.9824	153.938	22 1/2	70.6860	397.609
5 5/8	17.6715	24.8505	14 1/8	44.3751	156.700	22 5/8	71.0787	402.038
5 3/4	18.0642	25.9673	14 1/4	44.7678	159.485	22 3/4	71.4714	406.494
5 7/8	18.4569	27.1086	14 3/8	45.1605	162.296	22 7/8	71.8641	410.973
6	18.8496	28.2744	14 1/2	45.5532	165.130	23	72.2568	415.477
6 1/8	19.2423	29.4648	14 5/8	45.9459	167.990	23 1/8	72.6495	420.004
6 1/4	19.6350	30.6797	14 3/4	46.3386	170.874	23 1/4	73.0422	424.558
6 3/8	20.0277	31.9191	14 7/8	46.7313	173.782	23 3/8	73.4349	429.135
6 1/2	20.4204	33.1831	15	47.1240	176.715	23 1/2	73.8276	433.737
6 5/8	20.8131	34.4717	15 1/8	47.5167	179.673	23 5/8	74.2203	438.364
6 3/4	21.2058	35.7848	15 1/4	47.9094	182.655	23 3/4	74.6130	443.015
6 7/8	21.5985	37.1224	15 3/8	48.3021	185.661	23 7/8	75.0057	447.690
7	21.9912	38.4846	15 1/2	48.6948	188.692	24	75.3984	452.390
7 1/8	22.3839	39.8713	15 5/8	49.0875	191.748	24 1/8	75.7911	457.115
7 1/4	22.7766	41.2826	15 3/4	49.4802	194.828			

(Continued on next page)

CIRCLES (*Continued*)

TABLE OF DIAMETERS, CIRCUMFERENCES AND AREAS

Diam.	Circum.	Area	Diam.	Circum.	Area	Diam.	Circum.	Area
24 1/4	76.1838	461.864	32 5/8	102.4947	835.972	41	128.806	1,320.260
24 3/8	76.5765	466.638	32 3/4	102.8874	842.391	41 1/8	129.198	1,328.320
24 1/2	76.9692	471.436	32 7/8	103.280	848.833	41 1/4	129.591	1,336.410
24 5/8	77.3619	476.259	33	103.673	855.301	41 3/8	129.984	1,344.520
24 3/4	77.7546	481.107	33 1/8	104.065	861.792	41 1/2	130.376	1,352.660
24 7/8	78.1473	485.979	33 1/4	104.458	868.309	41 5/8	130.769	1,360.820
25	78.5400	490.875	33 3/8	104.851	874.850	41 3/4	131.162	1,369.000
25 1/8	78.9327	495.796	33 1/2	105.244	881.415	41 7/8	131.554	1,377.210
25 1/4	79.3254	500.742	33 5/8	105.636	888.005	42	131.947	1,385.450
25 3/8	79.7181	505.712	33 3/4	106.029	894.620	42 1/8	132.340	1,393.700
25 1/2	80.1108	510.706	33 7/8	106.422	901.259	42 1/4	132.733	1,401.990
25 5/8	80.5035	515.726	34	106.814	907.922	42 3/8	133.125	1,410.300
25 3/4	80.8962	520.769	34 1/8	107.207	914.611	42 1/2	133.518	1,418.630
25 7/8	81.2889	525.838	34 1/4	107.600	921.323	42 5/8	133.911	1,426.990
26	81.6816	530.930	34 3/8	107.992	928.061	42 3/4	134.303	1,435.370
26 1/8	82.0743	536.048	34 1/2	108.385	934.822	42 7/8	134.696	1,443.770
26 1/4	82.4670	541.190	34 5/8	108.778	941.609	43	135.089	1,452.200
26 3/8	82.8597	546.356	34 3/4	109.171	948.420	43 1/8	135.481	1,460.660
26 1/2	83.2524	551.547	34 7/8	109.563	955.255	43 1/4	135.874	1,469.140
26 5/8	83.6451	556.763	35	109.956	962.115	43 3/8	136.267	1,477.640
26 3/4	84.0378	562.003	35 1/8	110.349	969.000	43 1/2	136.660	1,486.170
26 7/8	84.4305	567.267	35 1/4	110.741	975.909	43 5/8	137.052	1,494.730
27	84.8232	572.557	35 3/8	111.134	982.842	43 3/4	137.445	1,503.300
27 1/8	85.2159	577.870	35 1/2	111.527	989.800	43 7/8	137.838	1,511.910
27 1/4	85.6086	583.209	35 5/8	111.919	996.783	44	138.230	1,520.530
27 3/8	86.0013	588.571	35 3/4	112.312	1,003.790	44 1/8	138.623	1,529.190
27 1/2	86.3940	593.959	35 7/8	112.705	1,010.822	44 1/4	139.016	1,537.860
27 5/8	86.7867	599.371	36	113.098	1,017.878	44 3/8	139.408	1,546.56
27 3/4	87.1794	604.807	36 1/8	113.490	1,024.960	44 1/2	139.801	1,555.29
27 7/8	87.5721	610.268	36 1/4	113.883	1,032.065	44 5/8	140.194	1,564.04
28	87.9648	615.754	36 3/8	114.276	1,039.195	44 3/4	140.587	1,572.81
28 1/8	88.3575	621.264	36 1/2	114.668	1,046.349	44 7/8	140.979	1,581.61
28 1/4	88.7502	626.798	36 5/8	115.061	1,053.528	45	141.372	1,590.43
28 3/8	89.1429	632.357	36 3/4	115.454	1,060.732	45 1/8	141.765	1,599.28
28 1/2	89.5356	637.941	36 7/8	115.846	1,067.960	45 1/4	142.157	1,608.16
28 5/8	89.9283	643.549	37	116.239	1,075.213	45 3/8	142.550	1,617.05
28 3/4	90.3210	649.182	37 1/8	116.632	1,082.490	45 1/2	142.943	1,625.97
28 7/8	90.7137	654.840	37 1/4	117.025	1,089.792	45 5/8	143.335	1,634.92
29	91.1064	660.521	37 3/8	117.417	1,097.118	45 3/4	143.728	1,643.89
29 1/8	91.4991	666.228	37 1/2	117.810	1,104.469	45 7/8	144.121	1,652.89
29 1/4	91.8918	671.959	37 5/8	118.203	1,111.844	46	144.514	1,661.91
29 3/8	92.2845	677.714	37 3/4	118.595	1,119.244	46 1/8	144.906	1,670.95
29 1/2	92.6772	683.494	37 7/8	118.988	1,126.669	46 1/4	145.299	1,680.02
29 5/8	93.0699	689.299	38	119.381	1,134.118	46 3/8	145.692	1,689.11
29 3/4	93.4626	695.128	38 1/8	119.773	1,141.591	46 1/2	146.084	1,698.23
29 7/8	93.8553	700.982	38 1/4	120.166	1,149.089	46 5/8	146.477	1,707.37
30	94.2480	706.860	38 3/8	120.559	1,156.612	46 3/4	146.870	1,716.54
30 1/8	94.6407	712.763	38 1/2	120.952	1,164.159	46 7/8	147.262	1,725.73
30 1/4	95.0334	718.690	38 5/8	121.344	1,171.731	47	147.655	1,734.95
30 3/8	95.4261	724.642	38 3/4	121.737	1,179.327	47 1/8	148.048	1,744.19
30 1/2	95.8188	730.618	38 7/8	122.130	1,186.948	47 1/4	148.441	1,753.45
30 5/8	96.2115	736.619	39	122.522	1,194.593	47 3/8	148.833	1,762.74
30 3/4	96.6042	742.645	39 1/8	122.915	1,202.263	47 1/2	149.226	1,772.06
30 7/8	96.9969	748.695	39 1/4	123.308	1,209.958	47 5/8	149.619	1,781.40
31	97.3896	754.769	39 3/8	123.700	1,217.677	47 3/4	150.011	1,790.76
31 1/8	97.7823	760.869	39 1/2	124.093	1,225.420	47 7/8	150.404	1,800.15
31 1/4	98.1750	766.992	39 5/8	124.486	1,233.188	48	150.797	1,809.56
31 3/8	98.5677	773.140	39 3/4	124.879	1,240.981	48 1/8	151.189	1,819.00
31 1/2	98.9604	779.313	39 7/8	125.271	1,248.798	48 1/4	151.582	1,828.46
31 5/8	99.3531	785.510	40	125.664	1,256.640	48 3/8	151.975	1,837.95
31 3/4	99.7458	791.732	40 1/8	126.057	1,264.510	48 1/2	152.368	1,847.46
31 7/8	100.1385	797.979	40 1/4	126.449	1,272.400	48 5/8	152.760	1,856.99
32	100.5312	804.250	40 3/8	126.842	1,280.310	48 3/4	153.153	1,866.55
32 1/8	100.9239	810.545	40 1/2	127.235	1,288.250	48 7/8	153.546	1,876.14
32 1/4	101.3166	816.865	40 5/8	127.627	1,296.220	49	153.938	1,885.75
32 3/8	101.7093	823.210	40 3/4	128.020	1,304.210	49 1/8	154.331	1,895.38
32 1/2	102.1020	829.579	40 7/8	128.413	1,312.220	49 1/4	154.724	1,905.04

(*Continued on next page*)

CIRCLES (*Continued*)

TABLE OF DIAMETERS, CIRCUMFERENCES AND AREAS

Diam.	Circum.	Area	Diam.	Circum.	Area	Diam.	Circum.	Area
49 3/8	155.116	1,914.72	57 3/4	181.427	2,619.36	66 1/8	207.738	3,434.17
49 1/2	155.509	1,924.43	57 7/8	181.820	2,630.71	66 1/4	208.131	3,447.17
49 5/8	155.902	1,934.16	58	182.213	2,642.09	66 3/8	208.524	3,460.19
49 3/4	156.295	1,943.91	58 1/8	182.605	2,653.49	66 1/2	208.916	3,473.24
49 7/8	156.687	1,953.69	58 1/4	182.998	2,664.91	66 5/8	209.309	3,486.30
50	157.080	1,963.50	58 3/8	183.391	2,676.36	66 3/4	209.702	3,499.40
50 1/8	157.473	1,973.33	58 1/2	183.784	2,687.84	66 7/8	210.094	3,512.52
50 1/4	157.865	1,983.18	58 5/8	184.176	2,699.33	67	210.487	3,525.66
50 3/8	158.258	1,993.06	58 3/4	184.569	2,710.86	67 1/8	210.880	3,538.83
50 1/2	158.651	2,002.97	58 7/8	184.962	2,722.41	67 1/4	211.273	3,552.02
50 5/8	159.043	2,012.89	59	185.354	2,733.98	67 3/8	211.665	3,565.24
50 3/4	159.436	2,022.85	59 1/8	185.747	2,745.57	67 1/2	212.058	3,578.48
50 7/8	159.829	2,032.82	59 1/4	186.140	2,757.20	67 5/8	212.451	3,591.74
51	160.222	2,042.83	59 3/8	186.532	2,768.84	67 3/4	212.843	3,605.04
51 1/8	160.614	2,052.85	59 1/2	186.925	2,780.51	67 7/8	213.236	3,618.35
51 1/4	161.007	2,062.90	59 5/8	187.318	2,792.21	68	213.629	3,631.69
51 3/8	161.400	2,072.98	59 3/4	187.711	2,803.93	68 1/8	214.021	3,645.05
51 1/2	161.792	2,083.08	59 7/8	188.103	2,815.67	68 1/4	214.414	3,658.44
51 5/8	162.185	2,093.20	60	188.496	2,827.44	68 3/8	214.807	3,671.86
51 3/4	162.578	2,103.35	60 1/8	188.889	2,839.23	68 1/2	215.200	3,685.29
51 7/8	162.970	2,113.52	60 1/4	189.281	2,851.05	68 5/8	215.592	3,698.76
52	163.363	2,123.72	60 3/8	189.674	2,862.89	68 3/4	215.985	3,712.24
52 1/8	163.756	2,133.94	60 1/2	190.067	2,874.76	68 7/8	216.378	3,725.75
52 1/4	164.149	2,144.19	60 5/8	190.459	2,886.65	69	216.770	3,739.29
52 3/8	164.541	2,154.46	60 3/4	190.852	2,898.57	69 1/8	217.163	3,752.85
52 1/2	164.934	2,164.76	60 7/8	191.245	2,910.51	69 1/4	217.556	3,766.43
52 5/8	165.327	2,175.08	61	191.638	2,922.47	69 3/8	217.948	3,780.04
52 3/4	165.719	2,185.42	61 1/8	192.030	2,934.46	69 1/2	218.341	3,793.68
52 7/8	166.112	2,195.79	61 1/4	192.423	2,946.48	69 5/8	218.734	3,807.34
53	166.505	2,206.19	61 3/8	192.816	2,958.52	69 3/4	219.127	3,821.02
53 1/8	166.897	2,216.61	61 1/2	193.208	2,970.58	69 7/8	219.519	3,834.73
53 1/4	167.290	2,227.05	61 5/8	193.601	2,982.67	70	219.912	3,848.46
53 3/8	167.683	2,237.52	61 3/4	193.994	2,994.78	70 1/8	220.305	3,862.22
53 1/2	168.076	2,248.01	61 7/8	194.386	3,006.92	70 1/4	220.697	3,876.00
53 5/8	168.468	2,258.53	62	194.779	3,019.08	70 3/8	221.090	3,889.80
53 3/4	168.861	2,269.07	62 1/8	195.172	3,031.26	70 1/2	221.483	3,903.63
53 7/8	169.254	2,279.64	62 1/4	195.565	3,043.47	70 5/8	221.875	3,917.49
54	169.646	2,290.23	62 3/8	195.957	3,055.71	70 3/4	222.268	3,931.37
54 1/8	170.039	2,300.84	62 1/2	196.350	3,067.97	70 7/8	222.661	3,945.27
54 1/4	170.432	2,311.48	62 5/8	196.743	3,080.25	71	223.054	3,959.20
54 3/8	170.824	2,322.15	62 3/4	197.135	3,092.56	71 1/8	223.446	3,973.15
54 1/2	171.217	2,332.83	62 7/8	197.528	3,104.89	71 1/4	223.839	3,987.13
54 5/8	171.610	2,343.55	63	197.921	3,117.25	71 3/8	224.232	4,001.13
54 3/4	172.003	2,354.29	63 1/8	198.313	3,129.64	71 1/2	224.624	4,015.16
54 7/8	172.395	2,365.05	63 1/4	198.706	3,142.04	71 5/8	225.017	4,029.21
55	172.788	2,375.83	63 3/8	199.099	3,154.47	71 3/4	225.410	4,043.29
55 1/8	173.181	2,386.65	63 1/2	199.492	3,166.93	71 7/8	225.802	4,057.39
55 1/4	173.573	2,397.48	63 5/8	199.884	3,179.41	72	226.195	4,071.51
55 3/8	173.966	2,408.34	63 3/4	200.277	3,191.91	72 1/8	226.588	4,085.66
55 1/2	174.359	2,419.23	63 7/8	200.670	3,204.44	72 1/4	226.981	4,099.84
55 5/8	174.751	2,430.14	64	201.062	3,217.00	72 3/8	227.373	4,114.04
55 3/4	175.144	2,441.07	64 1/8	201.455	3,229.58	72 1/2	227.766	4,128.26
55 7/8	175.537	2,452.03	64 1/4	201.848	3,242.18	72 5/8	228.159	4,142.51
56	175.930	2,463.01	64 3/8	202.240	3,254.81	72 3/4	228.551	4,156.78
56 1/8	176.322	2,474.02	64 1/2	202.633	3,267.46	72 7/8	228.944	4,171.08
56 1/4	176.715	2,485.05	64 5/8	203.026	3,280.14	73	229.337	4,185.40
56 3/8	177.108	2,496.11	64 3/4	203.419	3,292.84	73 1/8	229.729	4,199.74
56 1/2	177.500	2,507.19	64 7/8	203.811	3,305.56	73 1/4	230.122	4,214.11
56 5/8	177.893	2,518.30	65	204.204	3,318.31	73 3/8	230.515	4,228.51
56 3/4	178.286	2,529.43	65 1/8	204.597	3,331.09	73 1/2	230.908	4,242.93
56 7/8	178.678	2,540.58	65 1/4	204.989	3,343.89	73 5/8	231.300	4,257.37
57	179.071	2,551.76	65 3/8	205.382	3,356.71	73 3/4	231.693	4,271.84
57 1/8	179.464	2,562.97	65 1/2	205.775	3,369.56	73 7/8	232.086	4,286.33
57 1/4	179.857	2,574.20	65 5/8	206.167	3,382.44	74	232.478	4,300.85
57 3/8	180.249	2,585.45	65 3/4	206.560	3,395.33	74 1/8	232.871	4,315.39
57 1/2	180.642	2,596.73	65 7/8	206.953	3,408.26	74 1/4	233.264	4,329.96
57 5/8	181.035	2,608.03	66	207.346	3,421.20	74 3/8	233.656	4,344.55

(*Continued on next page*)

CIRCLES (*Continued*)

TABLE OF DIAMETERS, CIRCUMFERENCES AND AREAS

Diam.	Circum.	Area	Diam.	Circum.	Area	Diam.	Circum.	Area
74 1/8	234.049	4,359.17	83 1/8	261.145	5,426.93	91 5/8	287.849	6,593.54
74 1/4	234.442	4,373.81	83 1/4	261.538	5,443.26	91 3/4	288.242	6,611.55
74 3/8	234.835	4,388.47	83 3/8	261.931	5,459.62	91 7/8	288.634	6,629.57
74 1/2	235.227	4,403.16	83 1/2	262.324	5,476.01	92	289.027	6,647.63
75	235.620	4,417.87	83 5/8	262.716	5,492.41	92 1/8	289.420	6,665.70
75 1/8	236.013	4,432.61	83 3/4	263.109	5,508.84	92 1/4	289.813	6,683.80
75 1/4	236.405	4,447.38	83 7/8	263.502	5,525.30	92 3/8	290.205	6,701.93
75 3/8	236.798	4,462.16	84	263.894	5,541.78	92 1/2	290.598	6,720.08
75 1/2	237.191	4,476.98	84 1/8	264.287	5,558.29	92 5/8	290.991	6,738.25
75 5/8	237.583	4,491.81	84 1/4	264.680	5,574.82	92 3/4	291.383	6,756.45
75 3/4	237.976	4,506.67	84 3/8	265.072	5,591.37	92 7/8	291.776	6,774.68
75 7/8	238.369	4,521.56	84 1/2	265.465	5,607.95	93	292.169	6,792.92
76	238.762	4,536.47	84 5/8	265.858	5,624.56	93 1/8	292.562	6,811.20
76 1/8	239.154	4,551.41	84 3/4	266.251	5,641.18	93 1/4	292.954	6,829.49
76 1/4	239.547	4,566.36	84 7/8	266.643	5,657.84	93 3/8	293.347	6,847.82
76 3/8	239.940	4,581.35	85	267.036	5,674.51	93 1/2	293.740	6,866.16
76 1/2	240.332	4,596.36	85 1/8	267.429	5,691.22	93 5/8	294.132	6,884.53
76 5/8	240.725	4,611.39	85 1/4	267.821	5,707.94	93 3/4	294.525	6,902.93
76 3/4	241.118	4,626.45	85 3/8	268.214	5,724.69	93 7/8	294.918	6,921.35
76 7/8	241.510	4,641.53	85 1/2	268.607	5,741.47	94	295.310	6,939.79
77	241.903	4,656.64	85 5/8	268.999	5,758.27	94 1/8	295.703	6,958.26
77 1/8	242.296	4,671.77	85 3/4	269.392	5,775.10	94 1/4	296.096	6,976.76
77 1/4	242.689	4,686.92	85 7/8	269.785	5,791.94	94 3/8	296.488	6,995.28
77 3/8	243.081	4,702.10	86	270.178	5,808.82	94 1/2	296.881	7,013.82
77 1/2	243.474	4,717.31	86 1/8	270.570	5,825.72	94 5/8	297.274	7,032.39
77 5/8	243.867	4,732.54	86 1/4	270.963	5,842.64	94 3/4	297.667	7,050.98
77 3/4	244.259	4,747.79	86 3/8	271.356	5,859.59	94 7/8	298.059	7,069.59
77 7/8	244.652	4,763.07	86 1/2	271.748	5,876.56	95	298.452	7,088.24
78	245.045	4,778.37	86 5/8	272.141	5,893.55	95 1/8	298.845	7,106.90
78 1/8	245.437	4,793.70	86 3/4	272.534	5,910.58	95 1/4	299.237	7,125.59
78 1/4	245.830	4,809.05	86 7/8	272.926	5,927.62	95 3/8	299.630	7,144.31
78 3/8	246.223	4,824.43	87	273.319	5,944.69	95 1/2	300.023	7,163.04
78 1/2	246.616	4,839.83	87 1/8	273.712	5,961.79	95 5/8	300.415	7,181.81
78 5/8	247.008	4,855.26	87 1/4	274.105	5,978.91	95 3/4	300.808	7,200.60
78 3/4	247.401	4,870.71	87 3/8	274.497	5,996.05	95 7/8	301.201	7,219.41
78 7/8	247.794	4,886.18	87 1/2	274.890	6,013.22	96	301.594	7,238.25
79	248.186	4,901.68	87 5/8	275.283	6,030.41	96 1/8	301.986	7,257.11
79 1/8	248.579	4,917.21	87 3/4	275.675	6,047.63	96 1/4	302.379	7,275.99
79 1/4	248.972	4,932.75	87 7/8	276.068	6,064.87	96 3/8	302.772	7,294.91
79 3/8	249.364	4,948.33	88	276.461	6,082.14	96 1/2	303.164	7,313.84
79 1/2	249.757	4,963.92	88 1/8	276.853	6,099.43	96 5/8	303.557	7,332.80
79 5/8	250.150	4,979.55	88 1/4	277.246	6,116.74	96 3/4	303.950	7,351.79
79 3/4	250.543	4,995.19	88 3/8	277.629	6,134.08	96 7/8	304.342	7,370.79
79 7/8	250.935	5,010.86	88 1/2	278.032	6,151.45	97	304.735	7,389.83
80	251.328	5,026.56	88 5/8	278.424	6,168.84	97 1/8	305.128	7,408.89
80 1/8	251.721	5,042.28	88 3/4	278.817	6,186.25	97 1/4	305.521	7,427.97
80 1/4	252.113	5,058.03	88 7/8	279.210	6,203.69	97 3/8	305.913	7,447.08
80 3/8	252.506	5,073.79	89	279.602	6,221.15	97 1/2	306.306	7,466.21
80 1/2	252.899	5,089.59	89 1/8	279.995	6,238.64	97 5/8	306.699	7,485.37
80 5/8	253.291	5,105.41	89 1/4	280.388	6,256.15	97 3/4	307.091	7,504.55
80 3/4	253.684	5,121.25	89 3/8	280.780	6,273.69	97 7/8	307.484	7,523.75
80 7/8	254.077	5,137.12	89 1/2	281.173	6,291.25	98	307.877	7,542.98
81	254.470	5,153.01	89 5/8	281.566	6,308.84	98 1/8	308.270	7,562.24
81 1/8	254.862	5,168.93	89 3/4	281.959	6,326.45	98 1/4	308.662	7,581.52
81 1/4	255.255	5,184.87	89 7/8	282.351	6,344.08	98 3/8	309.055	7,600.82
81 3/8	255.648	5,200.83	90	282.744	6,361.74	98 1/2	309.448	7,620.15
81 1/2	256.040	5,216.82	90 1/8	283.137	6,379.42	98 5/8	309.840	7,639.50
81 5/8	256.433	5,232.84	90 1/4	283.529	6,397.13	98 3/4	310.233	7,658.88
81 3/4	256.826	5,248.88	90 3/8	283.922	6,414.86	98 7/8	310.626	7,678.28
81 7/8	257.218	5,264.94	90 1/2	284.315	6,432.62	99	311.018	7,697.71
82	257.611	5,281.03	90 5/8	284.707	6,450.40	99 1/8	311.411	7,717.16
82 1/8	258.004	5,297.14	90 3/4	285.100	6,468.21	99 1/4	311.804	7,736.63
82 1/4	258.397	5,313.28	90 7/8	285.493	6,486.04	99 3/8	312.196	7,756.13
82 3/8	258.789	5,329.44	91	285.886	6,503.90	99 1/2	312.589	7,775.66
82 1/2	259.182	5,345.63	91 1/8	286.278	6,521.78	99 5/8	312.982	7,795.21
82 5/8	259.575	5,361.84	91 1/4	286.671	6,539.68	99 3/4	313.375	7,814.78
82 3/4	259.967	5,378.08	91 3/8	287.064	6,557.61	99 7/8	313.767	7,834.38
82 7/8	260.360	5,394.34	91 1/2	287.456	6,575.56	100	314.160	7,854.00
83	260.753	5,410.62						

MEASURES AND WEIGHTS

LINEAR MEASURE

12 inches = 1 foot — 3 feet = 1 yard
5½ yards = 1 rod — 40 rods = 1 furlong — 8 furlongs = 1 mile

EQUIVALENT VALUES

Inches	Feet	Yards	Rods	Furl'gs	Miles
36 =	3 =	1			
198 =	16.5 =	5.5 =	1		
7,920 =	660 =	220 =	40	= 1	
63,360 =	5,280 =	1,760 =	320	= 8	= 1

SQUARE MEASURE

144 square inches = 1 square foot — 30¼ square yards = 1 square rod
9 square feet = 1 square yard — 160 square rods = 1 acre
640 acres = 1 square mile

EQUIVALENT VALUES

Square mile	Acres	Square rods	Square yards	Square feet	Square inches
1 =	640 =	102,400 =	3,097,600 =	27,878,400 =	4,014,489,600

CUBIC MEASURE

1,728 cubic inches = 1 cubic foot — 128 cubic feet = 1 cord
27 cubic feet = 1 cubic yard — 24¾ cubic feet = 1 perch
1 cubic yard = 27 cubic feet = 46,656 cubic inches

WEIGHT—AVOIRDUPOIS

437½ grains = 1 ounce — 16 ounces = 1 pound — 100 pounds = 1 hundred-weight
2,000 pounds = 1 ton — 2,240 pounds = 1 long ton
1 ton = 20 cwt. = 2,000 pounds = 32,000 ounces = 14,000,000 grains
1 pound av. = 7,000 grains

WEIGHT—TROY

24 grains = 1 pennyweight — 20 pennyweights = 1 ounce
12 ounces = 1 pound
1 pound = 12 ounces = 240 pennyweights = 5,760 grains

DRY MEASURE

2 pints = 1 quart — 8 quarts = 1 peck — 4 pecks = 1 bushel
1 bushel = 4 pecks = 32 quarts = 64 pints
U. S. bushel = 2,150.42 cu. in. — British = 2,218.19 cu. in.

LIQUID MEASURE

4 gills = 1 pint — 4 quarts = 1 gallon
2 pints = 1 quart — 31½ gallons = 1 barrel
63 gallons or 2 barrels = 1 hogshead
1 hogshead = 2 barrels = 63 gallons = 252 quarts = 504 pints = 2,016 gills
The U. S. gallon contains 231 cu. in. = .134 cu. ft.
1 cubic foot = 7.481 gallons and weighs at 39.2 deg. Fahr. 62.425 lbs.
1 gallon weighs 8.345 pounds
(For ordinary work 1 cu. ft. is considered 7½ gals. 1 gal. 8⅓ lbs.)

MEASURE OF ANGLES OR ARCS

60 seconds = 1 minute — 90 degrees = 1 right angle or quadrant
60 minutes = 1 degree — 360 degrees = 1 circle
1 circle = 360° = 21,600' = 1,296,000"
1 minute of arc on the earth's surface = 1 nautical mile = 1.17 times a land mile or 6,080 feet

DECIMAL EQUIVALENTS OF COMMON FRACTIONS

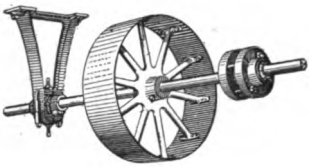
1/64 .015625	17/64 .265625	33/64 .515625	49/64 .765625
1/32 .03125	9/32 .28125	17/32 .53125	25/32 .78125
3/64 .046875	19/64 .296875	35/64 .546875	51/64 .796875
1/16 .0625	5/16 .3125	9/16 .5625	13/16 .8125
5/64 .078125	21/64 .328125	37/64 .578125	53/64 .828125
3/32 .09375	11/32 .34375	19/32 .59375	27/32 .84375
7/64 .109375	23/64 .359375	39/64 .609375	55/64 .859375
1/8 .125	3/8 .375	5/8 .625	7/8 .875
9/64 .140625	25/64 .390625	41/64 .640625	57/64 .890625
5/32 .15625	13/32 .40625	21/32 .65625	29/32 .90625
11/64 .171875	27/64 .421875	43/64 .671875	59/64 .921875
3/16 .1875	7/16 .4375	11/16 .6875	15/16 .9375
13/64 .203125	29/64 .453125	45/64 .703125	61/64 .953125
7/32 .21875	15/32 .46875	23/32 .71875	31/32 .96875
15/64 .234375	31/64 .484375	47/64 .734375	63/64 .984375
1/4 .25	1/2 .5	3/4 .75	64/64 1

DECIMAL EQUIVALENTS OF FRACTIONAL PARTS OF A FOOT

Parts of a Foot	Decimal Equivalents	Parts of a Foot	Decimal Equivalents	Parts of a Foot	Decimal Equivalents
12 inches.....	1.0000	5 inches.....	.4166	5/8 inches.....	.05208
11 "	.9166	4 "	.3333	1/2 "	.04166
10 "	.833	3 "	.2500	3/8 "	.03125
9 "	.75	2 "	.1666	1/4 "	.02083
8 "	.6666	1 "	.0833	1/8 "	.010416
7 "	.5833	7/8 "	.07291	1/16 "	.005208
6 "	.5000	3/4 "	.0625	.....	.....

METRIC CONVERSION TABLE

Millimeters × .03937 = inches, or ÷ 25.4 = inches.
Centimeters × .3937 = inches, or ÷ 2.54 = inches.
Meters × 39.37 = inches. Meters × 3.281 = feet. Meters × 1.094 = yards.
Kilometers × .621 = miles.
Kilometers × 3280.7 = feet.
Square millimeters × .0155 = square inches, or ÷ 645.1 = square inches.
Square centimeters × .155 = square inches, or ÷ 6.451 = square inches.
Square meters × 10.764 = square feet.
Square kilometers × 247.1 = acres.
Hectares × 2.471 = acres.
Cubic centimeters ÷ 16.383 = cubic inches.
Cubic meters × 35.315 = cubic feet.
Cubic meters × 1.308 = cubic yards.
Cubic meters × 264.2 = gallons (231 cubic inches).
Liters × 61.022 = cubic inches. (Act of Congress).
Liters × .2642 = gallons (231 cu. in.) or ÷ 3.78 = gallons (231 cu. in.)
Liters ÷ 28.316 = cubic feet.
Grammes × 15.432 = grains. (Act of Congress).
Grammes (water) ÷ 29.57 = fluid ounces.
Grammes ÷ 28.35 = ounces avoirdupois.
Grammes per cu. cent. ÷ 27.7 = lbs. per cu. in.
Kilograms × 2.2046 = pounds.
Kilograms × 35.3 = ounces avoirdupois.
Kilograms ÷ 1102.3 = tons (2,000 lbs.)
Kilograms per sq. cent. × 14.233 = lbs. per sq. in.



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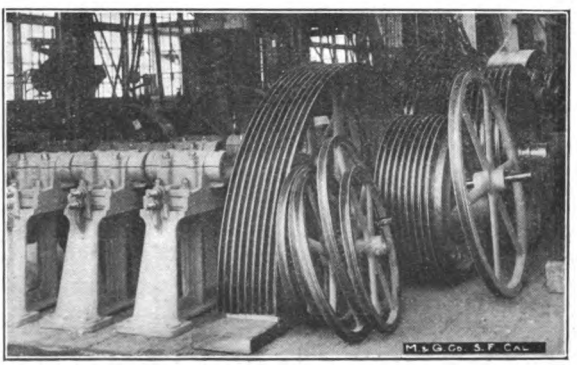

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INDEX (*Continued*)

MEMORANDA

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